

Session Title: Challenging Clinical Cases in Ischemic Heart Disease

Session Time: Saturday, August 17, 2024, 9:00 am - 9:50 am

Presentation Number: 13-05

Category: Ischemic Heart Disease

Title: ORGANIZED THROMBUS MASQUERADING AS SPONTANEOUS CORONARY ARTERY DISSECTION: A CASE REPORT

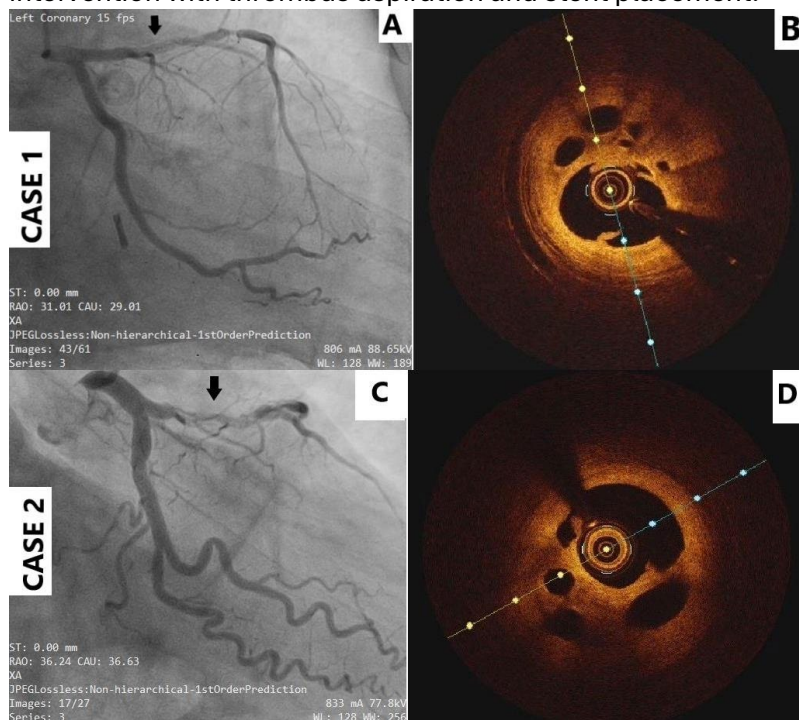
Author Block: riyaz charaniya, Apoorva M, Jayal Shah, Pratik Raval, U. N. Mehta Institute of Cardiology & Research Centre, Ahmedabad, India

Background: Spontaneous coronary artery dissection (SCAD), a rare cause of acute coronary syndrome, primarily affects young women without typical risk factors. It poses diagnostic challenges due to its varied angiographic appearances and the potential for mimics like organized thrombus. We report two middle-aged men initially diagnosed with SCAD, later confirmed to have organized thrombus.

Case: Two middle-aged men, both smokers, presented individually with chest pain persisting over 12 hours. Both showed ST-segment elevation in anterior leads on ECG and anterior wall hypokinesia with an LVEF of 40% on 2D ECHO. Urgent coronary angiography revealed contrast dye staining with multiple radiolucent lumens in the LAD, indicating potential SCAD (Figure 1A and 1C).

Decision-making: Given this unusual occurrence of SCAD, we investigated further using optical coherence tomography (OCT), which revealed an organized thrombus with a 'Swiss-cheese' appearance, contrasting with the typical radiolucent false lumen seen in SCAD (Figure 1B and 1D). Both cases then underwent successful percutaneous coronary intervention with thrombus aspiration and stent placement.

Abstract Body:



Conclusion: These cases underscore the diagnostic challenge between SCAD and organized thrombus, emphasising the role of multimodal imaging such as OCT for precise diagnosis and tailored management. Recognizing organized thrombus in the differential diagnosis of SCAD, particularly in symptomatic patients with risk factors, is crucial.

Session Title: Challenging Clinical Cases in Ischemic Heart Disease

Session Time: Saturday, August 17, 2024, 9:00 am - 9:50 am

Presentation Number: 13-07

Category: Ischemic Heart Disease

Title: A CASE OF SLE AND ECTATIC CORONARY ARTERIES PRESENTING AS UNSTABLE ANGINA

Author Block: [Khawar Khan](#), Bashir Ahmad Naikoo, GMC Srinagar and associated hospitals, Srinagar, India

Background: In a study of young patients with SLE, substantial atherosclerosis is present in up to half. The involvement of coronary arteries can be due to the systemic inflammation associated with SLE along with traditional cardiovascular disease risk factors and glucocorticoid use.

Case: A 54 year old hypertensive male presented with persistent chest pains at rest. He was reasonably well four years back when he initially noted circular patches of thick, reddened skin on his nose and ears. On investigating he was found to have anaemia, thrombocytopenia and high ESR and CRP. His creatinine was 1.64 mg/dl and urine showed active urinary sediment. His ANA and Anti-dsDNA were positive. His echocardiography showed multiple RWMA and an ejection fraction of 35%. A coronary angiography was performed which showed ectatic left main, proximal LAD 80% tight lesion, mid LAD cut-off filling from retrograde side, D1 was an ectatic vessel with distal 99% tight lesion, the left

Abstract Body: circumflex was also ectatic with mid LCX showing a 50-60% non obstructive plaque, the RCA was plaqued with with grade 2 calcium, LIMA was severely atretic.

Decision-making: A provisional diagnosis of SLE with coronary coronary disease was made. Patient was put on standard treatment for CAD (Aspirin, clopidogrel, atorvastatin) and heart failure (ACEi, Metaprolol succinate, dapagliflozin and diuretic) and was referred for a CABG in view of non settable ectatic vessels. Along with it he was started on hydroxychlorquine 400mg BD for his SLE.

Conclusion: SLE is very rare in men. Among various unusual presentations of SLE coronary artery disease is also present. CAD can be due to the systemic inflammation associated with lupus or due to accelerated atherosclerosis associated with traditional risk factors or corticosteroids. Sometimes the coronary arteries are ectatic and in such cases stenting the vessels becomes difficult. As such, a combined clinical decision by a cardiologist, a rheumatologist and a cardiac surgeon need to be taken to treat such rare cases.

Session Title: Challenging Clinical Cases in Ischemic Heart Disease

Session Time: Saturday, August 17, 2024, 9:00 am - 9:50 am

Presentation Number: 13-09

Category: Ischemic Heart Disease

Title: KOUNIS SYNDROME - A CONUNDRUM

Author Block: [Krishna Akkineni](#), Ambuj Roy, Goutam Kintada, AIIMS NEW DELHI, NEW DELHI, India

Background: Kounis syndrome is described as anaphylaxis manifesting as acute coronary syndrome. Most common triggers are antibiotics and insect bites.

Case: Patient is a 69-year-old female, known diabetic and hypertensive, doing well on medical management. She presented to the emergency with history of fever and cough for 3 days. Baseline ECG was normal and CT chest was suggestive of consolidation in the right lung. She was given injectable Cephalosporin and oral Azithromycin for the infection. Within half an hour of the injection, she developed generalised itching and wheezing with severe chest pain and hypotension. ECG showed diffuse and marked T wave inversions and QT prolongation. High sensitivity troponin was significantly elevated. Auscultation revealed fine basilar crepitations and echo cardiography was suggestive of LAD territory hypokinesia with an ejection fraction of 40%.

Decision-making: Fluid resuscitation was started after which the blood pressure and perfusion improved. A diagnosis of NSTEMI was made. Urgent coronary angiography

Abstract Body: revealed normal coronaries. Patient was managed conservatively with intravenous steroid and anti-histaminic for the allergic reaction. Chest pain resolved within 2 hours. Heart failure was managed conservatively. Electrolyte values were within normal limits and ECG changes resolved completely within 2 days. Levofloxacin and Azithromycin were continued for the infection, and patient made a full recovery.

Conclusion: Kounis syndrome is a rare cause of acute coronary syndrome. Prompt recognition and management are necessary. This patient had type 1 Kounis syndrome - normal coronary arteries with vasospasm due to allergic reaction. Type 2 and type 3 Kounis syndrome have abnormal coronary arteries with vasospasm and are managed with anti-platelets, anti-coagulation and angioplasty as required. Beta blockers and morphine should be avoided in these patients. Epinephrine is useful in management of anaphylaxis but should be used cautiously in Kounis syndrome as it can aggravate spasm. Conservative management with steroids and antihistamines and nitrates to relieve spasm lead to full recovery in most cases of type 1 Kounis syndrome.

Session Title: Prevention and Health Promotion Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 9:00 am - 9:50 am

Presentation Number: 12-05

Category: Prevention and Health Promotion

Title: UNVEILING THE MYSTERY BEHIND SUDDEN CARDIAC DEATH IN YOUNG ADULTS: AN AUTOPSY AND MOLECULAR STUDY OF 50 CASES

Author Block: SHIVANGI DAGAR, ANSH GOSWAMI, CHITTARANJAN BEHERA, ABHISHEK YADAV, Ambuj Roy, RUMA RAY, SUDHEER ARAVA, AIIMS, New Delhi, India

Background: Sudden cardiac death (SCD) is defined as natural death due to cardiac causes, within one hour after the onset of symptoms. The most common cause of SCD remains to be Ischemic heart disease, but various inherited conditions play a factor in SCD in young. Amidst the rising cases of sudden death in the young in India, it becomes necessary to address the causes behind these events; and to look for the role of genetic factors, if any

Methods: A total of 50 cases suspected to have suffered SCD were comprehensively analysed using verbal autopsy, conventional autopsy, whole heart examination, microscopy and whole exome sequencing (WES), wherever deemed necessary, using Illumina Novaseq 6000 platform. The clinical variants were evaluated using ACMG/AMP guidelines

Results: The mean age was 34.3 years with a male to female ratio of 6:1. The most common causes were ischemic cardiomyopathy and negative autopsy i.e., the cases where no cause of death could be arrived at even after thorough examination, each constituting 30%,

Abstract Body: followed by HCM in 18% cases. Other causes included DCM, congenital anomalies, ARVC, valvular heart disease, peripartum cardiomyopathy, cardiac rupture and myopericarditis. A total of thirty one cases were subjected to NGS analysis. Seven out of fifteen (46.7%) cases of negative autopsy harbored mutation, primarily in cardiomyopathy-susceptible (n=5) and channelopathy-associated (n=2) genes. Cardiomyopathy associated mutations were observed in 55.5% cases of HCM (n=5), 75% cases of DCM (n=3) and the sole case of ARVC (n=1). Most of the variants were Variant of uncertain significance (VUS), while three likely pathogenic variants and one pathogenic variant were revealed

Conclusion: Our study tells that Ischemic cardiomyopathy remains to be among the most common causes of SCD even in young, and also revealed the importance of molecular autopsy by uncovering mutations in concealed cardiomyopathy cases and primary electrical disorders of heart which present without any overt structural abnormalities. For drawing more well-founded conclusions, it calls for a larger multi-institutional study to explore the factors leading to SCD in young people in India

Session Title: Prevention and Health Promotion Oral Abstract Presentations

Session Time:Saturday, August 17, 2024, 9:00 am - 9:50 am

Presentation Number: 12-07

Category: Prevention and Health Promotion

Title: ASSOCIATION OF BREAST ARTERY CALCIFICATION WITH CORONARY ARTERY DISEASE IN INDIAN WOMEN - CROSS-SECTIONAL STUDY

Sajeet Verma, Roopali Khanna, Namita Mohindra, Ankit K. Sahu, Sudeep Kumar, Naveen

Author Block: Garg, Satyendra Tewari, Aditya Kapoor, Sanjay Gandhi Post Graduate Institute of Medical sciences, Lucknow, India, India

Background: There is increasing evidence of the association of Breast arterial calcification (BAC) with coronary artery disease (CAD) in women. The aim of the study was to assess the association of BAC with CAD on coronary angiography and with traditional risk factors. To assess the predictive value of BAC for CAD compared to Framingham risk score (FRS) and Atherosclerotic Cardiovascular Disease (ASCVD) risk scores.

Methods: Single-center, observational cross-sectional design, enrolling consecutive women aged 40 years or older undergoing coronary angiography due to suspected CAD and digital mammography from September 2021 to March 2023.

Results: The study enrolled 223 patients, with a mean age of 57.5 ± 8.8 years. Obstructive CAD was present in 155 (69.5%) and 136 patients (60.9%) had BAC on mammography. BAC was significantly more prevalent in patients with obstructive CAD compared to those with non- obstructive CAD. The increasing age and the presence of calcium on coronary angiograms were associated with BAC. The BAC score had acceptable discriminatory power, with an area under the curve (AUC) of 0.655. Combining the FRS and BAC scores improved the predictive performance for obstructive CAD significantly, with a higher AUC (0.656) compared to FRS alone (0.568).

Conclusion: This study provides evidence of an association between the presence of BAC and angiographically proven obstructive CAD. Combining BAC assessment with traditional risk scores may improve the predictive accuracy for CAD in women.

Abstract Body:

ROC of FRS, ASCVD risk score, BAC score, and its combination for predicting obstructive CAD.

Variables	FRS	ASCVD risk score	BAC score	FRS+BAC score	ASCVD risk score + BAC score
Sensitivity (95% CI)	43.23% (35.3 - 51.4%)	80% (72.8 - 86.0%)	49.68% (41.6 - 57.8%)	66.45% (58.4 - 73.8%)	85.81% (79.3 - 90.9%)
Specificity (95% CI)	72.06% (59.9 - 82.3%)	38.24% (26.7 - 50.8%)	83.82% (72.9 - 91.6%)	64.71% (52.2 - 75.9%)	35.29% (24.1 - 47.8%)
The area under the ROC curve	0.568	0.593	0.655	0.656	0.606
PPV (95% CI)	77.9% (67.7 - 86.1%)	74.7% (67.4 - 81.1%)	87.5% (78.7 - 93.6%)	81.1% (73.2 - 87.5%)	75.1% (68.1 - 81.3%)
NPV (95% CI)	35.8% (27.8 - 44.4%)	45.6% (32.4 - 59.3%)	42.2% (33.8 - 51.0%)	45.8% (35.6 - 56.3%)	52.2% (36.9 - 67.1%)
P value	0.0969	0.0249	<0.0001	<0.0001	0.0011
Diagnostic accuracy	52.02%	67.26%	60.09%	65.92%	70.40%

Abbreviations –NPV – Negative Predictive Value; PPV – Positive Predictive Value; ROC – Receiver operating curve.

Session Title: Prevention and Health Promotion Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 9:00 am - 9:50 am

Presentation Number: 12-09

Category: Prevention and Health Promotion

Title: INCIDENCE AND RISK FACTORS OF LATE-ONSET CARDIOVASCULAR DISTURBANCES IN CHADOX1-NCOV-19 VACCINATED INDIVIDUALS: AN EXPLORATORY ANALYSIS OF A ONE-YEAR-LONG OBSERVATIONAL STUDY IN NORTH INDIA

Author Block: TARUNI SRIJA REDDY NOTI, SANKHA SUBHRA CHAKRABARTY, UPINDER KAUR, INSTITUTE OF MEDICAL SCIENCES, BANARAS HINDU UNIVERSITY, VARANASI, India

Background: Evidence on the long-term cardiovascular safety of COVID-19 vaccines is scarce. The present study aims to provide an incidence & risk factors of late-onset cardiovascular adverse events (CVAEs) in ChAdOx1-nCoV-19 vaccinated individuals.

Methods: This is a sub-group analysis of our published work on the long-term safety of the ChAdOx1-nCoV-19 vaccine. Study participants were healthcare workers & elderly & were followed up telephonically from February 2021 to April 2022. Individuals were categorized into three groups: **VNC:** Vaccinated individuals with No COVID-19, **CAV:** Individuals developing COVID-19 After the Vaccine, & **VAC:** Individuals receiving the Vaccine After recovery from COVID-19. Risk factors of CVAEs were identified.

Results: Out of 1650 individuals enrolled (median age: 35 years), data on CVAEs was available for 1535. Cardiac AEs were reported in 21 (1.4%) with palpitations (8), chest pain (6), & dyspnea (5) being the common AEs. The odds of cardiac AEs were 3.9(1.3-11.6) & 16.6 (4.8-58.8) times higher in obese individuals (BMI \geq 25) & in those receiving a single dose of vaccine. The VAC group was at 5.2 (1.5-18.5) times higher odds of cardiac AEs compared to the VNC ($p=0.01$) group. Vascular AEs, including flares of underlying disease, were observed in 28 (1.8%), with hypertension ($n=20$) & hypotension($n=4$) being the common AEs. Individuals of \geq 40 years & the VAC group were at 3.1 (1.2-7.5) & 3.5 (1.4-9.1) times higher odds of vascular AEs compared respectively to participants of $<$ 40 years of age & the VNC group. No difference in CVAEs was observed between the VAC & the CAV groups. Serious AEs were reported in seven (0.4%) & included cases of acute exacerbation of heart failure, new onset heart failure, cardiac arrest, stroke, hypertension complicating pregnancy & myocarditis.

Conclusion: The association of vaccine-associated CVAEs with old age, obesity, & the number of vaccine doses should be explored in future studies. Individuals receiving any dose of the ChAdOx1-nCoV-19 vaccine after recovery from natural COVID-19 might be at higher risk of both cardiac & vascular disturbances & warrant extended active surveillance.

Abstract Body:

Session Title: Challenging Clinical Cases in Interventional and Structural

Session Time: Saturday, August 17, 2024, 10:00 am - 10:50 am

Presentation Number: 17-05

Category: Interventional and Structural

Title: TRANSRADIAL APPROACH SHOCKWAVE INTRAVASCULAR LITHOTRIPSY AND PERCUTANEOUS TRANSLUMINAL RENAL ANGIOPLASTY FOR RENAL ARTERY STENOSIS

Author Block: Krushan Nirmal Yajnik, Abhijeet Arun Palshikar, Sahyadri Super Speciality Hospital, Pune, India

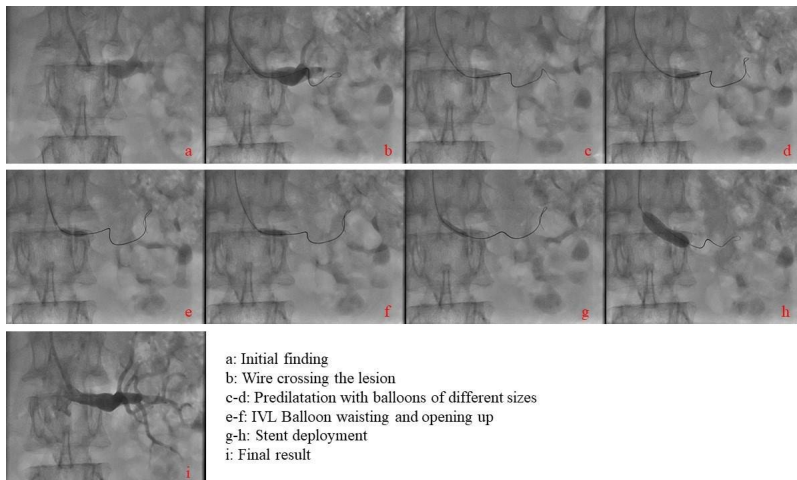
Background: Renal Artery (RA) Stenosis (RAS) is a leading cause of secondary hypertension, presenting with flash pulmonary edema, progressive renal dysfunction and accelerated hypertension. Intravascular Lithotripsy (IVL) can be used successfully in select calcific atherosclerotic lesions for Percutaneous Transluminal Renal Angioplasty (PTRA).

Case: 67 year old hypertensive male with history of Coronary Artery Bypass Grafting (CABG) presented with accelerated resistant hypertension (BP: 193/114mmHg) and flash pulmonary edema on background of progressive renal dysfunction (S. Creatinine: 3.4mg/dL; eGFR: 19ml/min/1.73m²). Transradial (TRA) Coronary and Renal Angiography showed native coronary artery disease with patent CABG graft and left renal ostial 99% heavily calcific stenosis.

Decision-making: Calcifications demanded lesion modification with IVL. Left RA was engaged with 6F guiding catheter. Predilatation was done using 1.5x10mm Euphora and 2.5x15mm TREK balloons at 16 atm. Shockwave balloon 3.5x12mm was inflated at 4 atm. 80 pulses of IVL created fractures in the calcium. Stenting was done with Renofit 7x18mm stent with postdilatation at 16atm. Excellent angiographic outcome was noted. Antihypertensives were tapered and creatinine was seen to be in a declining trend.

Abstract Body:

Conclusion: To the best knowledge of the authors, this is the first case to report TRA for PTRA with IVL. The advantages of TRA can be extended to peripheral stenting even in lesions requiring plaque modification.



Session Title: Challenging Clinical Cases in Interventional and Structural

Session Time: Saturday, August 17, 2024, 10:00 am - 10:50 am

Presentation Number: 17-07

Category: Interventional and Structural

Title: CALMING THE VF STORM WITH STELLATE GANGLION BLOCK AND PCI BIFURCATION LAD-DG VIA TORTUOUS RADIAL ARTERY IN INFERIOR WALL STEMI S/P VA ECMO, IABP, IJ PACEMAKER

Author Block: Wittawat Wattanasiriporn, Rajavithi Hospital, Bangkok, Thailand

Background: Stellate Ganglion Blockade and VA ECMO can effectively stabilizing and maintaining hemodynamic status in VF storm.

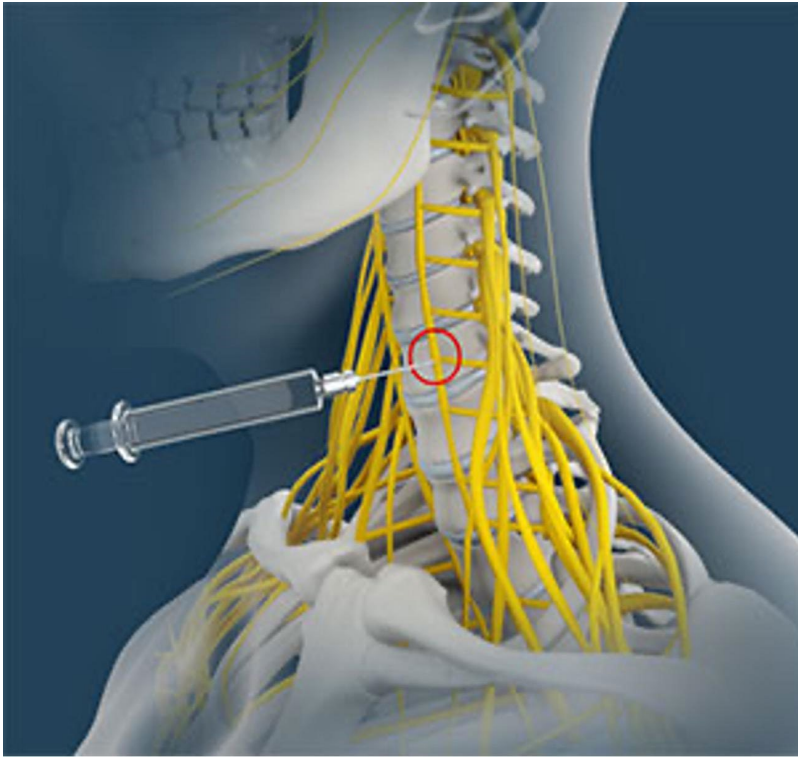
Case: Thai male 65 years, Risk HT. 1 hr PTA had acute chest pain then developed VF arrest. V/S (after CPR ROSC) BP 117/69 mmHg HR 42 bpm. EKG showed ST elevation at II, III, aVF, STD at V1-V6 and High grade AVB. Echocardiogram showed LVEF 42%, HK at anterior, anterolateral and inferior wall, no significant VHD. CXR showed bilateral pulmonary congestion.

Decision-making: CAG via 7Fr RFA Sheath with Dx catheter JL 4.0/6 Fr, JR 4.0/6Fr showed DVD, LAD: 70-80% stenosis p-m LAD, 80-90% stenosis DG1, RCA: 100% stenosis mRCA. PCI to RCA with GD catheter: JR 4.0/6Fr. Rinato wire to RCA, inserted Thrombuster, Sapphire II pro inflated mRCA. BMX alpha 3.0 x 33 mm deployed mRCA. Inserted IABP, Rt IJ pacemaker. After sent the patient back to CCU developed cardiac arrest with VF storm. Multiple defibrillator shocks was done. The patient was given IV Amiodarone then IV Lidocaine. Overdrive pacing can not break VF storm. VA ECMO was initiated. Stellate ganglion block was done and effectively stabilizing VF storm and sent the patient to perform PCI to LAD-DG via RRA using 6Fr sheath. Pass tortuous subclavian artery with Terumo wire. GD catheter: EBU 6/3.0 to LCA. Rinato pass to LAD, Sion pass to DG. 1.5 x 20 mm SC balloon inflated DG. 2.5 x 15 mm sc balloon inflated p-mLAD. BMX alpha 2.75 x 33 mm deployed p-mLAD.

Conclusion: SGB and VA ECMO can effectively stabilizing and maintaining hemodynamic

Abstract Body:

status in VF storm.



Session Title: Challenging Clinical Cases in Interventional and Structural

Session Time: Saturday, August 17, 2024, 10:00 am - 10:50 am

Presentation Number: 17-09

Category: Interventional and Structural

Title: CHALLENGING MANAGEMENT OF SYMPTOMATIC CARDIAC RHABDOMYOMA NOT ASSOCIATED WITH TUBEROUS SCLEROSIS

Author Block: Shaik Khwaja Moinuddin Chisty, Yaseen Mohammad, Amukta Palakurthi, Nitin K. Rao, Anil kumar J S, Suman Vyas, Rajesh babu Gudipati, Star Hospitals, Hyderabad, India

Background: Cardiac rhabdomyomas are rare benign tumors, often associated with tuberous sclerosis. However, a case of sporadic cardiac rhabdomyoma without tuberous sclerosis is presented, posing management challenges

Case: 28 year old female had her antenatal scan which revealed Cardiac mass. Fetal echocardiography revealed a large cardiac mass attached to left Atrium and left ventricle (LV), with no signs of obstruction, no LV dysfunction. Fetal MRI revealed large homogenous mass of size 32x21 mm over the free wall of LV surface, isointense to myocardium on T1-weighted sequence with a provisional diagnosis of cardiac rhabdomyoma. On Day-1 of life, echocardiogram showed additional large PDA with severe pulmonary arterial hypertension. CT Angiography revealed coronary arteries coursing through the mass. Therefore, a surgical excision could not be planned. Later baby developed severe respiratory distress, tachycardia and LV dysfunction. On Day-3 of life, baby developed narrow QRS Tachycardia with rate of 220/min and wasn't responding to adenosine, so started on flecainide,

Abstract Body: amiodarone and esmolol infusions. Due to continuing deterioration, sternotomy, pericardiectomy with sternal splinting was done to increase the intra-thoracic space. Chest was kept open, temporary pacing wires were placed and everolimus was started. Whole exome sequencing out negative for TSC1 and TSC2 gene mutations. Gradually cardiac function and rhythm improved, inotropes were tapered and stopped, chest wall was closed and baby was discharged.

Decision-making: This is a case of sporadic cardiac rhabdomyoma arising due to unknown reported genetic variant in development of cardiac myocyte. Complications merely arose due to its structural obstruction or location but not due to its invasion into myocardium. Coronary arteries coursing through the mass was a novel finding and no other reported cases were reported earlier. Although the baby was negative for tuberous sclerosis, everolimus was effective in reducing tumor size

Conclusion: This case highlights the need for standardized management protocols for complications of cardiac Rhabdomyoma not associated with tuberous sclerosis.

Session Title: Heart Failure and Cardiomyopathies Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 10:00 am - 10:50 am

Presentation Number: 16-05

Category: Heart Failure and Cardiomyopathies

Title: A NOVEL AI-DERIVED PREDICTION MODEL USING RV- PA COUPLING AS A PROGNOSTIC PREDICTOR IN OLDER PATIENTS WITH CONGENITAL HEART DISEASE AND ASSOCIATED PULMONARY ARTERIAL HYPERTENSION

Author Block: Prayaag Kini, Reeta Varyani, SRI SATHYA SAI INSTITUTE OF HIGHER MEDICAL SCIENCES, Bengaluru, India

Background: The idea of Ventriculo-Arterial (VA) coupling refers to a match between increased ventricular afterload, and ventricular remodelling to counter it. Patients with CHD-PAH and hence VA *uncoupling* often get operated at later ages in developing countries, leading to post-operative PH crisis and RHF. The significance of VA uncoupling in CHD- PAH subset is studied here.

Methods: 125 serially recruited patients (mean age 19.5 ± 6.5 years; 78 as Derivative cohort) undergoing surgery for CHD-PAH between 2018 and 2021 were studied, keeping a minimum follow-up of 24 months. In-hospital combined primary endpoint (CPEP) was defined as post-op mortality or new RHF, PAH crisis and need of re-intubation and invasive ventilatory requirement. Longer term outcomes were defined as re-hospitalisation for RHF, or HF mortality upto 2 years or longer. All patients underwent right heart catheterisation pre-operatively. We used echo TAPSE as a surrogate of RV contractility and systolic PA pressure (s-PAP) on cath to reflect RV afterload. V-A coupling was expressed as TAPSE/s-PAP.

Abstract Body: Accuracy of the model was tested in 47 patients validation cohort from 2022.

Results: In the entire cohort, the cath-derived mean PAP was 67 ± 15 mmHg. Mean echo-estimated TAPSE/s-PAP was 0.31 ± 0.16 mm/mmHg. Patients who reached CPEP had significantly lower TAPSE/sPAP (0.28 ± 0.06 v/s 0.44 ± 0.09 , $p = 0.008$). TAPSE/s-PAP value below 0.24 mm/mmHg predicted mortality at 1 year in nested logistic regression with log-rank test $p = 0.001$ and performed better than five other parameters (*Absolute PVRI, PVRI/SVRI ratio, post oxygen PAEDP and PA mean, TVE` velocity and TAPSE*) with accuracy of 88% ($p = 0.009$, best value for inter-variable comparison) in a forward validation model of 47 patients till study submission. A Prediction model derived by weighting the predictors on Logistic regression also showed a high AUROC ($c = 0.81$) for predicting post-operative occurrence of CPEP on forward validation.

Conclusion: TAPSE/s-PAP is an easy, cost-effective and reproducible prognostic parameter for early and late post-operative outcomes in CHD- PAH patients. This is the first such prediction model in patients with CHD-PAH with high predictive capability.

Session Title: Heart Failure and Cardiomyopathies Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 10:00 am - 10:50 am

Presentation Number: 16-07

Category: Heart Failure and Cardiomyopathies

Title: ARGININE IN PATIENTS WITH HEART FAILURE CARBOHYDRATE METABOLISM DISORDERS
Vita Zektser, [Maria Petrukhnova](#), Yury N. Belenkov, Anastasia Krivova, Maria Kozhevnikova,

Author Block: I.M. Sechenov First Moscow State Medical University (Sechenov University), Moscow, Russian Federation

Background: We examined the relationship between arginine levels and the patients with HF and carbohydrate metabolism disorders. A decrease in arginine levels was in patients with diabetes mellitus. The possibility of using this metabolite as a prognostic marker cannot be ruled out. Arginine is important in metabolic processes - it takes a central place in nitrogen metabolism, and is a substrate for NO synthases. Endothelial dysfunction is one of the important mechanisms for the development of HF, and is typical for patients with type 2 diabetes, so analysis of arginine levels in this category of patients is a promising direction.

Methods: There were 206 patients, divided into 2 groups: with HF and type 2 diabetes (123 people); with HF without concomitant disorders of carbohydrate metabolism (83 people). The groups were comparable by gender and age. The parameters of ECHO CG, the concentration of NTproBNP, biochemical parameters (blood glycemic indicators and the level of glycated hemoglobin) were determined, and the level of arginine in the plasma of study participants was assessed (by use of high-performance liquid chromatography with

Abstract Body: mass spectrometry)

Results: The concentration of arginine in the 2 groups, a significant decrease in its level was revealed in patients with HF and type 2 diabetes - an average value of 73 μM ($p = 0,001$). It was also found that the ratio of arginine/asymmetric dimethylarginine (Arg/ADMA) in the group without carbohydrate metabolism disorders was higher - 176 μM - than in the group with type 2 diabetes ($p = 0,003$). The level of the metabolic precursor of arginine - citrulline - was significantly reduced in patients with type 2 diabetes - 29 μM ($p = 0,005$). Arginine is important in the processes of vasodilation, prevents oxidative stress and increases the sensitivity of peripheral tissues to insulin - this determines the prognostic value of this metabolite for patients with HF and type 2 DM.

Conclusion: In patients with HF and type 2 DM, the levels of arginine, citrulline and the Arg/ADMA ratio in the blood plasma are significantly lower than in patients without carbohydrate metabolism disorders. This opens up new possibilities in therapy and predicting the course of this phenotype.

Session Title: Heart Failure and Cardiomyopathies Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 10:00 am - 10:50 am

Presentation Number: 16-09

Category: Heart Failure and Cardiomyopathies

Title: UNRAVELLING THE GENETIC LANDSCAPE OF RESTRICTIVE CARDIOMYOPATHY: A STUDY OF 45 CASES

Author Block: ANSH GOSWAMI, Nafees Alam, Vishu Gupta, Prince Garg, Yogesh Kumar Gautam, Amit Katiyar, Vineeta Ojha, Pradeep Sharma, Sumit Rathore, Sanjeev Kumar, Chittaranjan Behera, Ruma Ray, Sandeep Seth, Sudheer Arava, All India Institute of Medical Sciences, Delhi, India

Background: Restrictive cardiomyopathy is one of the rarest types of cardiomyopathy with a prevalence of 1:1500-2000 globally. Clinicoradiologically, it is characterized by normal ventricles with dilated atrial chambers with diastolic dysfunction. Many secondary diseases can lead to RCM, but idiopathic RCM is majorly genetic in origin. The identification of causal genetic variants is important for precise diagnosis, and understanding of clinical severity, familial penetrance and prognosis of disease.

Methods: A total of 45 idiopathic RCM patients were evaluated using clinical, radiological, histopathological and genetic analysis. Pedigree charts were screened for echocardiographic and genetic penetrance. Whole exome sequencing of the probands was performed using the Illumina Novaseq 6000 platform. Validation of the identified mutations and familial segregation analysis was performed using Sanger sequencing. Mutations were evaluated for pathogenicity using the ACMG/AMP guidelines.

Results: Among the probands, mean age of onset was 26.2 years with the majority (42%) of affected individuals being in the age group of 0-18 years. 55.5% of the patients belong to NYHA class III followed by class II & IV. Out of 45 cases, genetic analysis was carried out in 36 cases. Analysis revealed 28 mutations in 22 cases, of which 4 were compound heterozygotes and 18 were homozygotes. Most of the variants were observed in the FLNC (n=7) gene followed by TNNI3 (n=6) and MYH7. 25% variants were predicted to be pathogenic/likely pathogenic and 75% were predicted to be variants of uncertain significance. 2 probands with confirmed genetic diagnosis underwent heart transplantation. Upon screening the family members (n=52), 7 families with familial disease were observed (15.5%). Members of 2 families were unaware of the condition and were found upon screening whereas 5 families reported members with already known diseases of variable severity. These individuals are kept under close observation and have been educated about the implications, hence, providing preventative care.

Conclusion: Comprehensive phenotype and genotype analysis of 45 cases revealed the spectrum of restrictive cardiomyopathy in India.

Session Title: Saturday Morning Poster Session

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board 1

Number:

Category: Electrophysiology

Title:

A GROUNDBREAKING ELECTROCARDIOGRAPHIC OBSERVATION: "ISOELECTRIC HORIZONTAL ST-SEGMENT WITH SHARP ST-T ANGLE" A NOVEL SIGN FOR ACUTE CORONARY SYNDROME.

Author Block:

Maitri Patel, Dhruvkumar M. Patel, Vahin Patel, Mukundkumar V. Patel, Poojan Jayesh Prajapati, Lalit B. Patel, Jigar K. Patel, Jayesh S. Prajapati, Pooja Patel, Sumantkumar G. Patel, Harsh D. Patel, Dhara Patel, Zydus Medical College and Hospital, Dahod, India

Background: We authors frequently observe isoelectric horizontal ST segments with sharp ST-T angles (IHST) in EKGs of acute coronary syndrome (ACS) patients (Figure 1). Our study aims to evaluate the significance of unrecognized EKG observation of IHST in patients with suspected ACS.

Methods: In this observational prospective study, suspected ACS cases were classified based on EKG findings into 3 groups: Group 1: ST depression; Group 2: T inversion and Group 3: apparently normal EKG. Group 3 cases were subclassified based on the presence or absence of the IHST EKG sign. All patients were tested for highly sensitive Troponin-I upon admission and after a 3-hour interval. Cases of STEMI and secondary ST T changes were excluded.

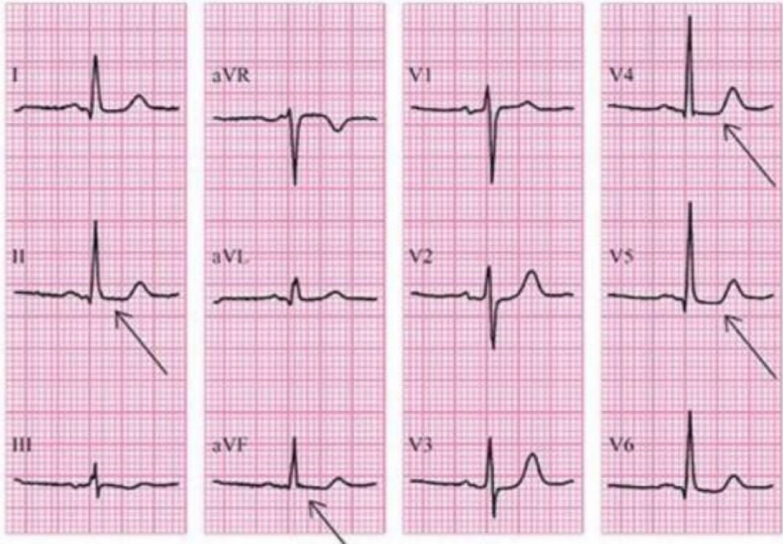
Abstract

Body:

Results: 699 out of 1120 patients were outlined as predominantly males (63.66%) with a mean age of 48.2 ± 12.5 years. ACS incidence was 77.96%, with 33.02%, 15.96%, and (15.04%, 35.96%) of patients in Groups 1, 2, and 3 (IHST positive, IHST negative), respectively. IHST exhibited higher sensitivity than T-inversion and greater specificity than ST-depression in detecting ACS. IHST sign additionally detected 15.04% of ACS. The sign was significant among group-3 ($p=0.008$) as well as the overall ACS cases ($p=0.048$). Multivariate logistic regression analysis emphasized the IHST sign's added diagnostic value over other EKG indicators.

Conclusion: The IHST is an unexplored EKG sign for the detection of myocardial ischemia in ACS.

Figure 1: Comparison of normal ST segment and ST-T angle (I, III, aVL, V1, V2, V3) with Isoelectric horizontal ST segment and sharp ST-T angle (Arrows) (II, aVF, V4, V5)



Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 2

Category: Heart Failure and Cardiomyopathies

Title: TAKOTSUBO CARDIOMYOPATHY ASSOCIATED WITH COMPLETE HEART BLOCK AND POLYMORPHIC VT

Author Block: Khawar Khan, Jahangir Beigh, GMC Srinagar and associated hospitals, Srinagar, India

Background: Takotsubo Cardiomyopathy is a transient cardiomyopathy that is non-ischemic in genesis and leads to severe LV (left ventricular) dysfunction. Takotsubo cardiomyopathy with high grade AV (atrioventricular) blocks have been rarely reported in literature. Ventricular arrhythmias may also occur. However, the co-occurrence of high grade AV block and ventricular arrhythmia in a patient with Takotsubo remains an extremely rare entity.

Case: A 35 year old female with no significant medical history presented with two episodes of syncope and mild breathlessness. On examination her respiratory rate was 29, heart rate was 38 beats per minute and blood pressure was 126/80 mmHg. An urgent ECG was ordered which showed a complete heart block with ventricular rate of 40 beats per minute. The escape was narrow and there were T wave inversions in V3, V4 and QTc was 501 msec. The Troponin-T levels were 0.47 ng/ml. The serum potassium was 4.2 mEq/lit and magnesium was 1.9 mEq/lit. Patient was taken for temporary transvenous pacing but developed a polymorphic ventricular tachycardia associated with haemodynamic compromise in cathlab and was successfully cardioverted. Echocardiography was performed which showed normal basal contraction and hypokinetic mid, distal and apical LV segments with an ejection fraction of 30%. A coronary angiogram was performed which did not reveal any obstructive coronary lesion. LV angiogram demonstrated hyperkinetic base and hypokinesia of mid, distal and apical segments with typical "Ballooning" appearance of the left ventricle.

Decision-making: Patient was put on guideline directed medical treatment for heart failure which included an ACE inhibitor, diuretics and an SGLT2 inhibitor. The cardiac contractility showed a complete recovery within one week including normalisation of QT interval, however, she persisted with the complete heart block. She was implanted with a dual chamber pacemaker.

Conclusion: Takotsubo cardiomyopathy is usually a reversible cardiac condition but ventricular arrhythmias may warrant longer duration of hospital stay. Sometimes heart block may occur that may require temporary or permanent pacing.

Abstract Body:

Session Title: Saturday Morning Poster Session

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 3

Category: Heart Failure and Cardiomyopathies

Title: EXPLORING THE OCCURRENCE AND OUTCOME OF ACUTE MYOCARDITIS IN PATIENTS WITH NASOPHARYNGEAL SWAB CONFIRMED VIRAL INFECTIONS

Author Block: Wesam Mulla, Sana Zahalka, Amitai Segev, Amir Novak, Alexander Fardman, Rafael Kuperstein, Shlomi Matetzky, Michael Arad, Roy Beigel, Anan Younis, Leviev Heart Center, Sheba Medical Center, Ramat Gan, Israel

Background: Acute myocarditis (AM), an inflammatory cardiac condition with diverse clinical manifestations, poses a diagnostic challenge due to overlapping symptoms with other acute cardiac conditions and limited available diagnostic tools. It is crucial to detect the disease early in its course and prevent persisting inflammation that may lead to dilated cardiomyopathy or sudden cardiac death. Respiratory viruses identified through nasopharyngeal swabs, are increasingly recognized as triggers for this condition.

Methods: A comprehensive retrospective chart review was undertaken to assess the frequency of respiratory viruses detected in nasopharyngeal swabs among patients with a confirmed diagnosis of AM at Sheba Medical Center between January 2005 and December 2020.

Results: We analyzed data from 146 consecutive patients hospitalized with a diagnosis of AM, who had a nasopharyngeal swab taken at admission (n = 425). Among these, 11 cases (representing 8%) tested positive for viral pathogens, with influenza A (n=5) and adenovirus (n=3) being the predominant viruses detected.

Abstract Body: These positive cases, with one exception, were identified during winter and early spring (10/77, 13%). For the patients with positive swabs, the average onset of symptoms prior to hospitalization was 10±9 days. All these patients experienced typical flu-like symptoms, such as fever, cough, or sore throat, and presented with chest pain (72% nonpleuritic and 28% pleuritic). Computed tomography angiography was performed in one case and conventional coronary angiography in 4 other cases, revealing no significant coronary artery disease in any case. Cardiac magnetic resonance imaging showed subepicardial late gadolinium enhancement in 64% of cases. Congestive heart failure developed in only one case during hospitalization.

Conclusion: This study provides valuable insights into the prevalence, clinical characteristics, and outcomes of AM associated with respiratory viruses. The incorporation of nasopharyngeal swabs in the diagnostic process could serve as a valuable tool for identifying viral triggers in AM, particularly during winter and early spring.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 5
Category: Heart Failure and Cardiomyopathies
Title: SEGMENTAL STRAIN , AND SEGMENTAL LAYERED STRAIN AS A PREDICTOR OF ARRHYTHMIAS IN HYPERTROPHIC CARDIOMYOPATHY- GENERATING A NOVEL PREDICTIVE MODEL USING MACHINE LEARNING
Author Block: Prayaag Kini, Reeta Varyani, SRI SATHYA SAI INSTITUTE OF HIGHER MEDICAL SCIENCES, Bengaluru, India
Abstract Body:
Background: APDs between healthy and HCM cardiomyocytes are increased upon β -Adrenergic stimulation, while endo-to-epicardial differences in HCM cardiomyocytes are reduced leading to heterogeneity in behaviour. This endo-epicardial gradient could be a potential “mother rotor” of arrhythmias in HCM. The aim of this study was to evaluate whether segmental strain, and layer-specific strain (studied using transmural gradient of longitudinal strain (TGLS) to detect endo-epicardial differences in APD) rather than GLS is more accurate in the identifying arrhythmogenicity.
Methods: 75 patients with HCM with documented VA were compared with 75 patients with HCM with no past history of VA till the time of study (Arm B). TGLS, defined as **the difference between LS of the endocardium and epicardium in a LV segment, was used to reflect layer-specific myocardial impairment.** LVOTO gradient, Sm, mean GLS, spatial QRS T angle, prolonged QTc, start of Q/R to peak negative strain (QTPN) and T1 and T2 relaxation times on CMRI were measured.
Results: Arm A had significantly higher values of spatial QRST and lower values of MAPSE and Sm. Abnormal TGLS (i.e. positive TGLS (GLS endo- GLS epi)) was significantly lower in the antero-basal and postero-basal segments compared to middle and apical levels in Arm A v/s Arm B and also showed a significant gradient from the base towards apex in Arm A. In Arm A, hypertrophic segments had significantly LOWER SEGMENTAL strain v/s total GLS ,and HIGHER TGLS than relatively normal segments(more negative)v/s Arm B at all 3 levels and correlated with higher QTPN and more confluent fibrosis. In AUROC analysis, abnormal REGIONAL TGLS and lower SEGMENTAL strain especially in basal segments with lower Sm and MAPSE correlated with arrhythmogenicity and higher grades of confluent fibrosis, and had good accuracy for predicting VA s v/s Arm B (Se, 85.3 %; Sp, 9.0 %; PPV 87%, NPV 91%). A predictive model using this parameter using Machine Learning showed excellent goodness-of-fit of 87% predictive accuracy in forward validation.
Conclusion: TGLS and Segmental Strain rather than GLS may reflect regional electro-mechanical impairment in patients with HCM/ HOCM and correlate with higher arrhythmogenicity

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 6

Category: Heart Failure and Cardiomyopathies

Title: ECHOCARDIOGRAPHIC PREDICTORS FOR SEVERITY OF PREECLAMPSIA AND ECLAMPSIA IN WOMEN ADMITTED IN CHONG HUA HOSPITAL FROM JANUARY 2013 TO AUGUST 2023

Author Block: JANICE MICHELLE SARIGUMBA, CHONG HUA HOSPITAL, CEBU CITY, Philippines, GOVERNOR CELESTINON GALLARES MEMORIAL MEDICAL CENTER, TAGBILARAN CITY, Philippines

Abstract Body:

Background: The cardiovascular changes in pregnancy may cause cardiac structure remodeling. Studies have shown that echocardiographic findings such as systolic and diastolic dysfunction, increased left ventricular mass, left ventricular hypertrophy and enlarged atrium may be considered as predictors for persistent hypertension, heart failure or other cardiovascular diseases after delivery. Studies correlating the severity of diastolic dysfunction with the severity of preeclampsia were done. This study aims to determine the echocardiographic predictors of patients with preeclampsia and eclampsia in Chong Hua Hospital.

Methods: This is a retrospective cross-sectional single-center study of patients admitted with preeclampsia or eclampsia from January 2013 to August 2023. This study gathered the demographic data, echocardiographic parameters and clinical outcomes of delivery, fetal outcome, and in-hospital morbidity and mortality. A total of 72 patients were studied, 9 with eclampsia and 63 with preeclampsia.

Results: The mean age was 30.92 years old and the mean gravidity is 1.94. There were statistically significant associations between age and gravidity with the severity of preeclampsia and eclampsia (p-value of 0.007 and 0.037, respectively). There were no statistical significance between the echocardiographic findings with the severity of eclampsia and preeclampsia. However, left ventricular remodeling and diastolic dysfunction were the common features noted in the study population.

Conclusion: The predictors of the severity of preeclampsia and eclampsia include the age and gravidity. Younger patients and lesser gravidity have significant associations with the risk of severity for preeclampsia and eclampsia. There were no echocardiographic predictors noted as to the severity of preeclampsia and eclampsia. However, left ventricular concentric hypertrophy and diastolic dysfunction were commonly found in the study population.

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 7

Category: Heart Failure and Cardiomyopathies

Title: RSOV RUPTURE INTO LA:A RARE ENTITY

Author Block: PURUSHOTTAM KUMAR, POPULAR HEART CLINIC, SITAMARHI, India

Background: Sinus of Valsalva aneurysm (SVA) is one of the rare congenital anomalies described in the literature, prevalence being 1% of all congenital anomalies of heart and circulation and 0.78% of all congenital open heart operations. Aneurysmal dilation affects the right sinus of Valsalva in 70% cases, non-coronary sinus in 25% cases and only 5% affects the left coronary sinus (LCS). Congenital deficiency of elastic and muscular tissue at the junction of aortic media and annulus fibroses of aortic valve is the etiology in majority of cases.

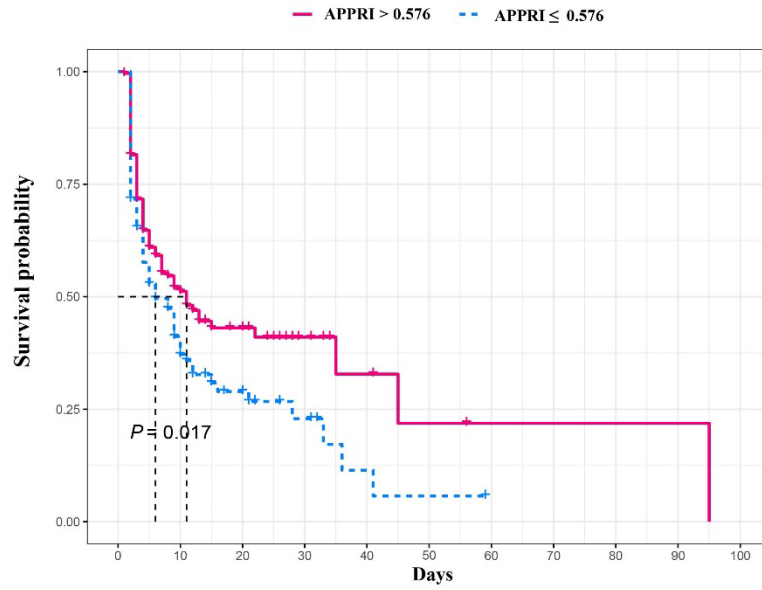
Case: A 21-year-old man presented to the OPD with History of Chest pain which was sudden and had a give away feel. Physical examination was remarkable for a grade III/VI continuous murmur at the second right upper sternal border. Initial lab values were remarkable for troponin 0.1 ng/mL (normal, 0-0.16 ng/mL) .A transthoracic echocardiogram showed marked dilatation of sinuses of valsalva and an aneurysm, which seemed to have ruptured into the left atrium (LA).

Abstract Body:

Decision-making: The sinus of valsalva aneurysm in our patient was most likely congenital given the young age of presentation. Since he did not have a prior echocardiogram, there is no sure way of knowing if the aneurysm was indeed acquired or was congenital . In our case, an open-heart surgery with transverse aortotomy was performed, reimplantation of coronary arteries, and primary closure repair of aorta which was done outside at a Higher centre.

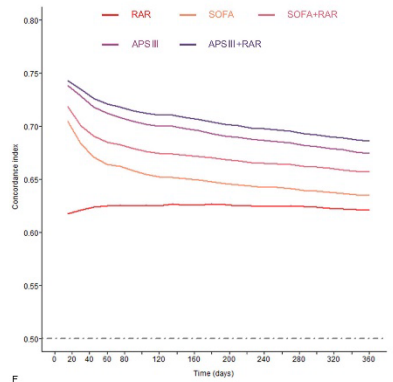
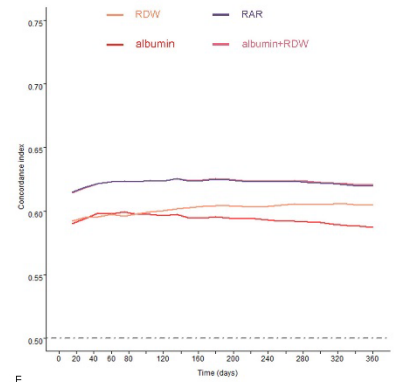
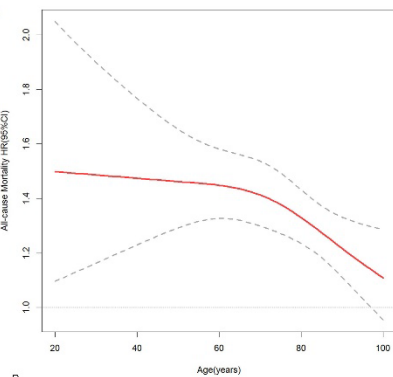
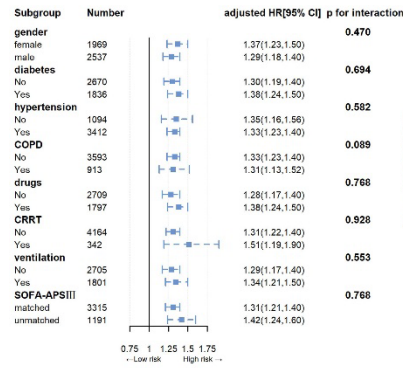
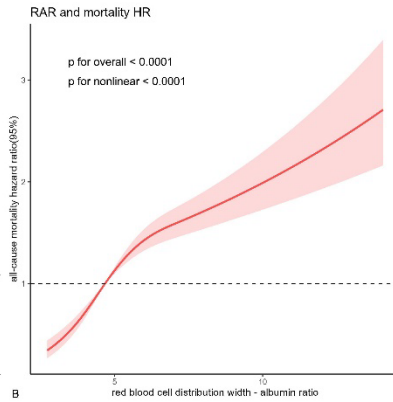
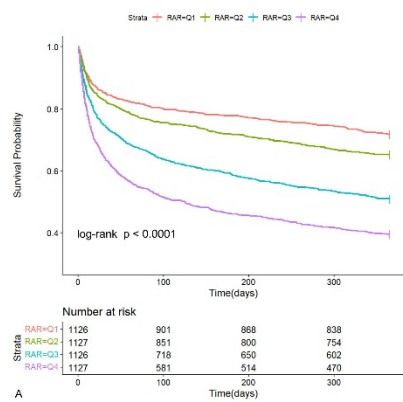
Conclusion: Congenital SVAs are typically silent clinically and detected in routine echocardiograms. However, symptomatic presentations related to the compression of adjacent cardiac structures or intracardiac shunting caused by ruptured of the SVA into the right side of the heart also occur, especially in older patients. Most commonly, SVAs originate from the right sinus of valsalva, accounting for about 75% of the cases, while noncoronary (10-30%) and left sinuses (<5%) are exceedingly accounting for the rest.The most common complication is rupture into the atrium or ventricle, and, very rarely, towards the left chambers, causing left-to-right shunting or aortic valve insufficiency with congestive heart failure and the need for urgent surgical resolution.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 8
Category: Heart Failure and Cardiomyopathies
Title: ASSOCIATION OF ALKALINE PHOSPHATASE TO PLATELET RATIO INDEX AND ICU MORTALITY IN PATIENTS WITH CARDIAC ARREST
Author Block: Yipin Zhao, Zebin Lin, Guoxing Li, Jianmin Tang, Central China Fuwai Hospital of Zhengzhou University, Zhengzhou, People's Republic of China
Background: Alkaline phosphatase to platelet ratio index (APPRI) was proposed as a novel inflammatory biomarker. This study was to investigate association between APPRI and ICU mortality in patients with cardiac arrest (CA).
Methods: 374 CA patients were classified into the survivor group (n=180) and non-survivor group (n=194) by survival during ICU stay. Baseline characteristics for these two groups were summarized and compared. Logistic regression analyses were performed to reveal the relationship between APRI and ICU mortality. ROC curve to was used to determine the optimal cutoff value of APPRI for ICU mortality. The Kaplan-Meier method and log-rank test were used to estimated the survival curves of different groups.
Abstract Body: **Results:** The non-survivor group exhibited higher APPRI values than the survivor group(0.430 [0.296, 0.733] vs.0.358 [0.246, 0.533]), $P<0.001$). Univariate logistic regression analysis showed that APPRI (OR=1.077, 95% CI: 1.013-1.146, $P=0.018$) was associated with ICU mortality. Multivariate logistic regression analysis revealed that APPRI was one of the independent predictors of ICU mortality (OR =1.110, 95% CI: 1.022-1.205, $P=0.013$). The ROC curve determined the APPRI optimal cutoff value for ICU mortality to be 0.576. The Kaplan-Meier curves showed that patients with APPRI > 0.576 had a higher ICU mortality than that of patients with APPRI \leq 0.576.
Conclusion: This study found that APPRI, as a new biomarker, was associated with the ICU mortality in CA patients.



Group	Number at risk										
APPRI > 0.576	261	56	25	8	4	2	1	1	1	1	0
APPRI ≤ 0.576	113	31	14	6	2	1	0	0	0	0	0

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 9
Category: Heart Failure and Cardiomyopathies
Title: ASSOCIATION BETWEEN RED CELL DISTRIBUTION WIDTH AND ALBUMIN RATIO AND ALL-CAUSE MORTALITY IN INTENSIVE CARE UNIT PATIENTS WITH HEART FAILURE
Author Block: Kai Wang, The Second Affiliated Hospital of Chongqing Medical University, Chongqing, People's Republic of China
Abstract Body:
Background: This study aimed to investigate the association between red cell distribution width and albumin ratio (RAR), an novel inflammatory marker, and the risk of 365-day all-cause mortality in intensive care unit (ICU) patients with heart failure.
Methods: Clinical data from MIMIC-IV database was utilized. Patients were categorized into quartile 1 to 4 based on RAR levels. Kaplan-Meier survival curve and multivariate adjusted Cox regression were to assess association. Subgroup analysis was to evaluate impact of RAR across diverse populations. Restricted cubic spline curve and threshold effect analysis were to quantify dose-response relationship. Time-concordance index curve was to explore additional value of RAR over Serial Organ Failure Assessment (SOFA) and Acute Physiology Score III (APS III).
Results: It enrolled 4, 506 patients with K-M curve and multivariate adjusted regression demonstrating that individuals in Q2 (hazard ratio (HR) 1.17, 95%CI 1.00~1.40), Q3 (HR 1.69, 95%CI 1.42~2.00) and Q4 (HR 2.23, 95%CI 1.80~2.80) had a increased risk of mortality compared to Q1, and this relationship was consistent across subgroups, except for different ages. Inclusion of RAR improved concordance index on basis of SOFA from 0.636 to 0.658 and APS III from 0.676 to 0.687 ($p < 0.001$).
Conclusion: High RAR was independently associated with an increased risk of 365-day all-cause mortality in ICU patients with heart failure, with a stronger effect in young and middle-aged patients and a threshold effect.



Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 10

Category: Heart Failure and Cardiomyopathies

Title: AN EXTREMELY RARE LIFE THREATENING ADVERSE EFFECT OF SGLT2 INHIBITOR - DAPAGLIFLOZIN

Author Block: Raghav Aggarwal, Samir M. Kubba, Dharamshila Narayana Superspeciality Hospital, Delhi, India

Abstract Body:

Background: SGLT2 (Sodium Glucose Transporter 2) Inhibitors are wonder drugs in the management of heart failure and are a very important pillar of heart failure therapy. Though very safe drugs, they can rarely have serious life-threatening complications.

Case: A 54 year old lady with complex medical history of metallic mitral valve replacement and prior ischemic cerebrovascular accident, surgery for subdural hematoma and moderate residual neurologic sequelae was admitted with acute decompensated heart failure following lower respiratory tract infection. HFpEF (Heart Failure with Preserved Ejection Fraction) with LVEF 55%, atrial fibrillation and diabetes mellitus were diagnosed. Post stabilisation she was initiated on dapagliflozin 10 mg in view of dyspnoea, high NT Pro BNP (700 pg/mL) and HbA1c (7%). 1 week later she had progressive weakness and deterioration of sensorium rapidly progressing to coma. CT Head revealed no fresh changes. Sodium levels were 169 mEq/L, Potassium 3.1 mEq/L, Urea 79 mg/dL, Creatinine 1.8 mg/dL and Blood glucose 322 mg/dL. Urine studies were consistent with osmotic diuresis. In all probability, the patient could not properly hydrate herself with adequate fluids due to her compromised neurological status.

Decision-making: Other causes for hypernatremia including Diabetes Insipidus, Mineralocorticoid excess, Sodium overload and any other administered drugs were ruled out by careful history taking and relevant clinical findings. Dapagliflozin was stopped and hypotonic fluid replacement given. Sodium levels normalized over 4 days and the patient improved completely.

Conclusion: Dehydration from osmotic diuresis post initiation of dapagliflozin can very rarely result in severe hypernatremia with severe neurologic deterioration and impaired consciousness. This is not a serious problem for those with free access to water who can easily compensate with increased fluid intake. But sufficient hydration and close monitoring of volume status is vital in SGLT2 inhibitor recipients, especially the ones like this index case. Only 4 case reports of this very rare life threatening adverse effect with SGLT2i have been described in the literature before. Ours is the 5th case

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 11
Category: Heart Failure and Cardiomyopathies
Title: LONG-TERM EFFECTS OF ENHANCED EXTERNAL COUNTERPULSATION IN THE MANAGEMENT OF PATIENTS WITH STABLE CORONARY HEART DISEASE COMPLICATED BY HEART FAILURE
Author Block: Nadezhda Nikolaeva, Alexey Lishuta, Maria Kozhevnikova, Yuri Belenkov, I.M. Sechenov First Moscow State Medical University, Moscow, Russian Federation
Abstract Body:
Background: Coronary heart disease (CHD) and chronic heart failure (CHF) are one of the main reasons for the decline in the quality of life of patients and their disability. The purpose of the study is to study the long-term effect of complex therapy with the addition of enhanced external counterpulsation (EECP) on exercise tolerance, quality of life (QOL), systolic heart function in patients with ischemic chronic heart failure (CHF).
Methods: Patients with verified ischemic CHF NYHA class II-III with reduced or intermediate left ventricular (LV) ejection fraction (n=118) in the open randomized study EXCEL (NCT05913778) were randomized into group 1 (n=59) - optimal medical therapy (OMT) and 2 courses (35 hours) EECP per year, group 2 (n=59) - OMT and 1 course (35 hours) EECP per year. All patients initially, after 12, 24 and 36 months underwent a 6-minute walk test (6MWT), assessment of clinical status, quality of life according to the MLHFQ questionnaire, levels of precursor brain natriuretic peptide (NT-proBNP), echocardiography (assessment of left ventricular ejection fraction; LVEF).
Results: Both groups had positive dynamics in CHF NYHA class (the average class decreased in the 1st group from 2.41 to 1.86 after 36 months, and in the 2nd group from 2.37 to 2.17, respectively) and the clinical status of the patients. A significant increase in the distance in 6MWT was found in both groups - in the 1st group the increase after 36 months was 59.4% and in the 2nd group - 34.3 %. There was a statistically significant decrease in the score in the MLHFQ questionnaire in the 1st group after 36 months - by 43,0% and in the 2nd group - by 30,0%, as well as a statistically significant increase in LVEF (by 21.2% in group 1 and 7.7% in group 2) and a decrease in NT-proBNP levels (by 51.2% in group 1 and 35.0% in group 2).
Conclusion: Consistent improvements in exercise capacity, quality of life and systolic cardiac function were demonstrated over a 36-month study period by the effects of EECP in patients with ischemic CHF. The obtained results demonstrated the effectiveness of the EECP as part of the complex therapy of patients with CHD complicated by CHF.

Session Title: Saturday Morning Poster Session

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 12

Category: Heart Failure and Cardiomyopathies

Title: PHARMACOGENETICS IN CHRONIC HEART FAILURE: A PROSPECTIVE STUDY

Author: Amandeep Kaur, Nusrat Shafiq, Ankur Gupta, Samir Malhotra, Postgraduate Institute of Medical Education & Research, Chandigarh, India

Block:

Background: Chronic heart failure (CHF) presents a significant clinical challenge, with a substantial portion of patients exhibiting poor responsiveness to pharmacological therapy. While various factors contribute to treatment resistance, including disease pathophysiology and patient demographics, the role of pharmacogenetic factors remained inadequately understood.

Methods: Patients with CHF underwent screening for eligibility criteria and subsequent enrollment in the study. Clinical, biochemical, and echocardiographic parameters were assessed at baseline, 6th month, and one-year follow-up periods. Pharmacodynamic responses were evaluated based on changes in ejection fraction, biomarker levels (SsT2, proBNP, Syndecan-1, and VWF), New York Heart Association class, and quality of life scores. Pharmacokinetic parameters were analyzed concerning genetic variants in drug-metabolizing enzymes using high-performance liquid chromatography and liquid chromatography-mass spectroscopy.

Abstract Body:

Results: This study analyzed individuals with heart failure, finding an average age of 56.2 years and a male majority (69%). Notably, nearly half had diabetes (47.5%) and average LVEF (28.92%). While blood pressure was slightly elevated (123.1 mmHg systolic), cholesterol levels were borderline high (152.3 mg/dl total) with elevated LDL (85.7 mg/dl). Most participants never smoked (68.33%), rarely drank alcohol (81.66%), and had low physical activity (67.21%). On the other hand, proBNP levels showed a slight decrease at the 6th month and a further increase at one year. The patient showed improvement in LVEF, quality of life score, and six-minute walk test as we analyzed the results from baseline to one year. Pharmacokinetic analysis via High-Performance Liquid Chromatography and Liquid Chromatography-Mass Spectrometry showed drug levels in their plasma at various time intervals.

Conclusion: This prospective study aimed to elucidate the role of pharmacogenetic factors in determining responsiveness to pharmacotherapy in patients with CHF. Findings from this study may inform personalized treatment strategies and contribute to improved outcomes in the management of CHF.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 14
Category: Heart Failure and Cardiomyopathies
Title: A YOUNG ADULT'S BATTLE FOR SURVIVAL: RARE CASE REPORT ON CHRONIC HEART FAILURE WITH COVID-19 CARDIOMYOPATHY
Author Block: Shambhavi Vashist, Maryam Billoo, Mahir Elder, Heart and Vascular Institute, Dearborn, MI, USA

Abstract Body:

Background: SARS-CoV-2 (COVID-19) has infected more than 167 million people globally. We present a rare case of non-ischemic cardiomyopathy associated with COVID-19 that results in acute-on-chronic heart failure of NYHA Functional Class IV with prolonged decline of ejection fraction. Management of the complexities of multiple comorbidities associated with COVID-19 with medications and cardiac rehabilitation remains the mainstay treatment to improve the clinical outcome of the patient.

Case: In the year 2020, a 26-year-old female with obesity, stage 2 chronic kidney disease and iron deficiency anemia presented with COVID-19 pneumonitis which led to viral cardiomyopathy with severely reduced ejection fraction (EF). A LifeVest wearable defibrillator was placed. At 6-month follow up, echocardiography revealed EF of 10-15% and severe eccentric mitral regurgitation (MR), cardiac magnetic resonance imaging (MRI) showed marked ventricular dilatation and a right heart catheterization was performed, the results of which showed elevated right atrial and right ventricular pressures. Patient was advised cardiac rehabilitation three times a week as palliation.

Decision-making:
A decision was made to put the patient on the Left Ventricular Assist Device (LVAD) to manage heart failure following which the systolic blood pressure and heart rate were unrecordable. Over the year 2022, echocardiography revealed EF of 15-20%, trace MR and normal systolic function, which was medically managed. In 2023, semaglutide 2 mg/dose subcutaneous injections were started in view of increasing body mass index (BMI), basic metabolic panel showed improvement and continued cardiac rehabilitation was recommended.

Conclusion: This case highlights the crucially beneficial cardiac rehabilitation, medication management and lifestyle modifications to achieve favorable prognosis in a young patient whose battle for survival continues with chronic severe heart failure.

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 15

Category: Heart Failure and Cardiomyopathies

Title: UNCOVERING THE UNUSUAL: A DESCRIPTIVE ANALYSIS OF 30 CARDIAC TUBERCULOMA CASES

Author Block: ANUSHRI PARIKH, Hriday Shah, Praveen Bharath Saravanan, Jamarc Simon, Aman Narula, Pranay Vaghela, Ishani Shah, Medical College Baroda, Vadodara, India, GMERS Medical College and General Hospital, Gotri, Vadodara, India

Background: Cardiac tuberculoma, a rare manifestation of tuberculosis affecting the heart, poses challenges in clinical practice due to its infrequent occurrence and varied presentations. Accurate diagnosis and management require understanding its pathophysiology and clinical features. This paper reviews the literature on its incidence, pathophysiology, and presentation, emphasizing diagnostic modalities and treatment strategies.

Methods: A literature search for English-language case reports of confirmed cardiac tuberculomas was conducted. Data on patient demographics, clinical features, diagnostic modalities, tuberculoma characteristics, treatments, and outcomes were extracted and analyzed using descriptive statistics and subgroup analyses.

Results: Analysis of 30 case reports revealed a mean age of 25.5 years with a male predominance (63.3%). Common clinical features included dyspnea (66.7%), fever (40%), cough (30%), and weight loss (23.3%). Echocardiography was primary (93.3%), with MRI (40%) and CT (26.7%) also used. Tuberculomas mostly affected the right atrium (46.7%), followed by the left atrium (23.3%) and ventricles. Anti-tuberculous therapy was primary (96.7%), with surgical resection (20%) and adjunctive medications (23.3%) also utilized.

Conclusion: In conclusion, this review of 30 patients with cardiac tuberculomas highlights a higher incidence in males (63.3%). The mean age was around 25.5 years and it predominantly affected the right atrium. Echocardiography played a crucial role in diagnosis, with biopsy often required for confirmation. Anti-tuberculous therapy was the mainstay, complemented by surgical intervention or adjunctive medications. Further research is needed to enhance understanding and outcomes in this condition.

Abstract Body:

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 16
Category: Heart Failure and Cardiomyopathies
Title: CASE REPORT OF RBM20 MUTATION IN DILATED CARDIOMYOPATHY
Author Block: Lan Huong Thi Le, Cong Trinh Tran, Tam Anh Ho Chi Minh General Hospital, Ho Chi Minh, Viet Nam

Abstract Body:

Background: Dilated cardiomyopathy (DCM) may arise from mutations in various genes. RBM20 (RNA-binding motif protein 20) mutations occur in 2-3% of familial DCM cases, elucidating some previously unexplained cases. Notably, RBM20 mutations have been pinpointed as the cause for certain DCM cases lacking a defined genetic origin. Herein, we present a case report of DCM linked to an RBM20 mutation.

Case: We detail the case of a 70-year-old male patient admitted with heart failure symptoms. He had no significant medical history but reported worsening symptoms over the past month, including dyspnea at rest. Examination revealed lung crackles and hepatomegaly. Elevated cardiac biomarkers, NT-ProBNP, and hs-Troponin T were observed. Coronary angiography showed no obstruction. Echocardiography displayed global hypokinesia and severe left ventricular dysfunction. Holter ECG monitoring detected non-sustained ventricular tachycardia (VT) and multiform PVCs. Cardiac MRI revealed dilated cardiomyopathy with increased LV volume, global hypokinesia, severe LV dysfunction, and mid-wall late gadolinium enhancement (LGE). Subsequent genetic testing confirmed RBM20 mutations, diagnosing RBM20-associated dilated cardiomyopathy, elucidating the patient's clinical presentation and underlying etiology.

Decision-making: Our case showed late-onset heart failure progression and arrhythmias, mirroring literature. The patient responded well to medical therapy, with improved ejection fraction after 5 months. Monitoring and ESC-guided treatment are ongoing. Although arrhythmias were detected, they're less severe. ICD isn't indicated yet; genetic screening is advised for family members.

Conclusion: RBM20 mutations manifest as a clinically aggressive DCM variant, predisposing to malignant ventricular arrhythmias. Thus, RBM20 cardiomyopathy is deemed an arrhythmogenic DCM subtype, warranting consideration for early ICD implantation and anti-arrhythmic drug therapy as potential treatment strategies.

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 17

Category: Heart Failure and Cardiomyopathies

Title: UNVEILING A SILENT THREAT--WHEN PERIPARTUM CARDIOMYOPATHY CONCEALS A HEMODYNAMICALLY SIGNIFICANT PATENT DUCTUS ARTERIOSUS

Author Block: Madel HIDALGO, Aurelia G. Leus, Makati Medical Center, Makati City, Philippines

Background: Peripartum cardiomyopathy is defined as an idiopathic cardiomyopathy presenting as heart failure secondary to LV systolic dysfunction towards the end of pregnancy where no other cause of heart failure is found. A persistent PDA can be clinically silent for years in adults until an inciting event shifts the equilibrium.

Case: F.L, a 40 year old female just had her firstborn when she noted recurrent rotatory dizziness, nausea, and palpitations accompanied by exertional dyspnea. She was diagnosed to have peripartum cardiomyopathy and started on heart failure medications including a diuretic. Despite her treatment regimen, her symptoms would recur 1 year later. Upon admission, she was hypotensive, tachycardic at 117 bpm with irregular cardiac rhythm, dynamic precordium, a displaced apex, with heaves and grade 1-2 short systolic murmur on the left infraclavicular area. 12 lead ECG would reveal atrial tachycardia. Her NT-proBNP was high at 1,751 pg/mL. A repeat TTE would show mosaic flow with a left-to-right shunt consistent with a patent ductus arteriosus (Qp:Qs = 2:1). PASP was calculated at 45 mmHg. Calculated Qp:Qs from right heart catheterization was 1.44. Device closure was successfully done.

Abstract Body:

Decision-making: The AHA/ACC guideline for management of adult patients with hemodynamically significant PDA suggests closure when the PVR was more than 1/3 of the systemic resistance and/or PASP >50% of the systemic circulation. A Qp:Qs of 1.44 can cast doubt as to whether device closure is indicated. Despite falling in the gray area of the algorithm proposed, the patient was still a candidate for closure as she had recurrent admissions for heart failure.

Conclusion: PPCM can be a life-threatening condition in women in the reproductive age. Nonetheless, the diagnosis of peripartum cardiomyopathy should be committed once a thorough workup for other causes of cardiomyopathies most especially congenital heart diseases. Implementing a systematic screening process guided by established protocols for congenital diseases in pregnant or prospective mothers can enhance patient outcomes and ensure informed decision-making prior to conception.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 18
Category: Heart Failure and Cardiomyopathies
Title: HEARTFELT INSIGHTS--METABOLIC DYSFUNCTION ASSOCIATED STEATOTIC LIVER DISEASE IN HFPEF PATIENTS (A 10 YEAR REVIEW)
Author Block: Madel HIDALGO, Raul Lontoc Lapitan, Makati Medical Center, Makati City, Philippines

Background: Metabolic Dysfunction Associated Steatotic Liver Disease (MASLD) is one of the most common causes of liver disease in western countries. Several reports have correlated MASLD as a risk factor for coronary artery disease. Its relationship with the development of heart failure is less clear.

Methods: A single center, retrospective chart review of 3164 charts from the medical records of a tertiary center for 2011 to 2021 with the diagnosis of HFpEF included adults 18 to 95 years old. Abdominal imaging and cardiometabolic criteria were used to identify the presence of MASLD. Descriptive statistics were used to summarize the general and clinical characteristics of the participants.

Results: Patients were grouped according to diagnosis of HFpEF (1576; 56.17%), HFrEF(638; 22.74%), and HFmrEF(592; 21.10%). A sample size of 217 patients diagnosed with heart failure with preserved ejection fraction was included. Out of these, 85 patients were identified with MASLD, resulting in a prevalence rate of 39.17% within the studied population. BMI did not show a significant association with MASLD when adjusted to age and sex though there is a trend toward increased odds in heavier categories indicating that BMI might not be a strong independent predictor in this context. Smoking status is significantly associated with MASLD, with smokers having higher odds of MASLD in adjusted analyses (OR=2.53, 95% CI: 1.08-6.07, p=.034), suggesting smoking as a potential risk factor. There was a significant increase in the odds of MASLD with higher triglyceride levels (adjusted OR=1.01, 95% CI: 1.01-1.02, p=.037). This suggests that elevated triglyceride levels may be associated with a higher likelihood of MASLD among HFpEF patients.

Conclusion: HFpEF is a curious amalgam of comorbidities. Hypertension, atrial fibrillation, diabetes mellitus, and cardiovascular diseases were present in both groups of patients with or without MASLD. In the background of the high prevalence detected in this study, MASLD may not be a benign entity in the setting of cardiovascular diseases as previously thought and can be an early indicator of a metabolic-inflammatory syndrome that the clinician must judiciously explore.

Abstract Body:

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 19
Category: Interventional and Structural

Title: CASE OF SINUS NODE DYSFUNCTION IN A 54-YEAR-OLD MALE WITH ANOMALOUS ORIGIN OF THE RIGHT CORONARY ARTERY FROM THE PULMONARY ARTERY: CLINICAL APPROACH & MANAGEMENT CONSIDERATIONS

Author Block: Bhavuk Jaiswal, Bhupinder singh, Akash Batta, Bishav Mohan, Dayanand Medical College, Ludhiana, India

Abstract Body:
Background: Anomalous origin of right coronary artery from pulmonary artery (ARCAPA) is rare with only about 200 reported cases. Due to its asymptomatic course true incidence may be higher. ARCAPA can present with dyspnea, fatigue, congestive heart failure, angina, MI or sudden cardiac death. Here, we present a rare case of syncope due to sinus node dysfunction from underlying ARCAPA.
Case: A 54-year old male presenting with exertional syncope for the past 3 months with no other significant neurological or cardiac history. On examination, patient BP-112/74mm of Hg, regular pulse rate of 42 beats/min. EKG showed sinus arrest with bradycardia and junctional rhythm with a rate of 42 bpm(Image A).Coronary angiogram revealed a normal left coronary system giving large collaterals to the tortuous right coronary artery (RCA) draining into the main pulmonary artery(Image B) suggestive of ARCAPA. Stress thallium showed a significant amount of myocardium at risk in RCA territory (12%).
Decision-making: Due to the significant ischemia documented on stress thallium and sinus node dysfunction, the patient was treated with surgical re-implantation of RCA. Patient was symptom free with normal sinus rhythm post procedure.
Conclusion: ARCAPA is a rare congenital anomaly with varied age and clinical presentations. Syncope due to ischemic sinus node dysfunction can occur from congenital anomalies like ARCAPA which highlights the importance of

evaluation for reversible causes of sinus node dysfunctions.

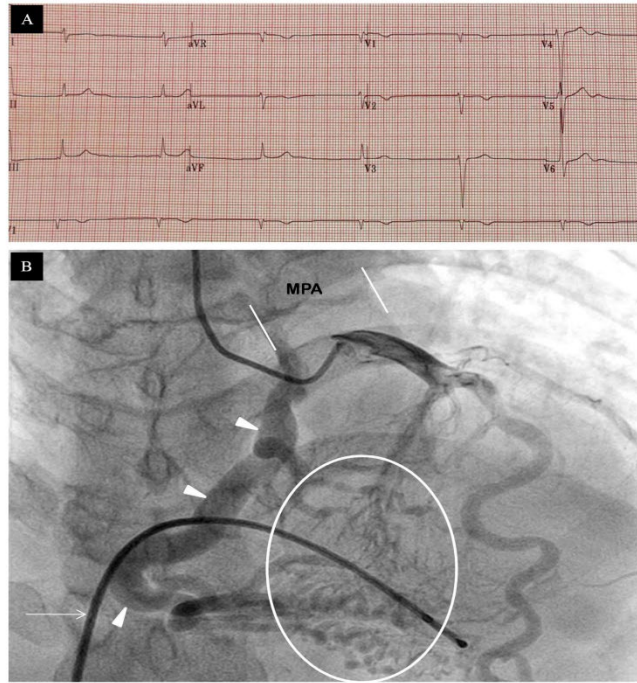


IMAGE 1: A 12-lead electrocardiogram (panel A) showing sinus arrest with a ventricular escape rate of 42 beats per minute. Left coronary angiogram (panel B) showing normal left coronary arteries giving huge septal collaterals (encircled) to the tortuous RCA (arrowheads) which is draining into the main pulmonary artery (white bars). TPI lead is seen in situ (arrow). RCA: right coronary artery, TPI: temporary pacemaker insertion.

Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 20

Category: Interventional and Structural

Title: OUTCOMES COMPARISON OF PATIENTS WHO UNDERWENT ROTATIONAL ATHERECTOMY WITH AND WITHOUT BRADYCARDIA IN THAI POPULATION

Author Block: Wittawat Wattanasiriporn, Rajavithi Hospital, Bangkok, Thailand

Background: Bradycardia and heart block are most commonly occurred when performing RA. A previous retrospective cohort showed that Heart block or temporary pacing was more commonly associated with right coronary artery and left-dominant circumflex lesions. Current expert consensus on RA from Japan and Europe provide no standard of care with regard to the use of temporary pacing during these procedures.

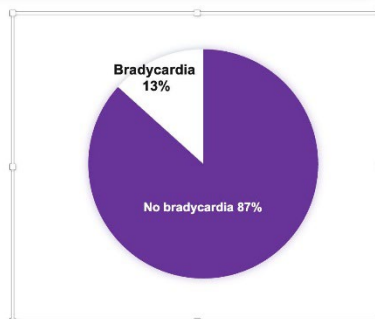
Methods: Observational retrospective cohort, we enrolled 128 Patients who underwent rotational atherectomy at Central Chest Institute of Thailand Between 1 June 2020 to 31 June 2022 to analyse Incidence of Bradycardia and Outcomes of Patients Who Underwent Rotational Atherectomy with and without Temporary pacemaker.

Results: A total of 128 patients were enrolled in this study. The incidence of bradycardia that required atropine or pacemaker activation are showed were 13.3% (17/128). Bradycardia is most common with RCA lesions but occur infrequently when RA is performed to the LAD or Rt dominant Lcx.

Conclusion: The incidence of bradycardia and temporary pacing during rotational atherectomy was very low. Bradycardia is most common with RCA lesions. The role of prophylactic temporary pacemaker should be considered with RA to the RCA and left dominant LCx artery to prevent conduction abnormalities but it is not necessary to use in the case of right dominant LCA.

Abstract Body:

	Frequency	Percent
Pacemaker activation		
yes	2	1.6%
no	126	98.4%
Atropine		
yes	16	12.5%
no	112	87.5%
Bradycardia		
yes	17	13.3%
no	111	86.7%



Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 21

Category: Interventional and Structural

Title: VA ECMO ASSISTED REVASCULARIZATION OF LAD AND CTO RCA IN INFERIOR WALL STEMI WITH CARDIAC ARREST

Author Block: Wittawat Wattanasiriporn, Rajavithi Hospital, Bangkok, Thailand

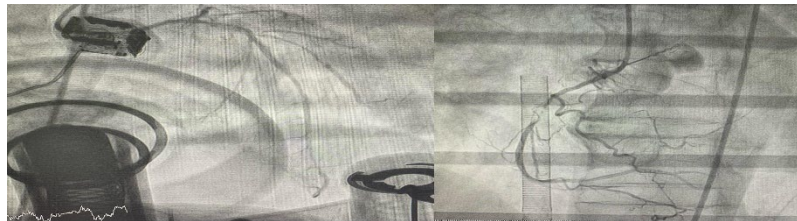
Background: Adequate MCS during PCI is a safe and feasible strategy to achieve PCI in complex and high risk patient

Case: Thai male 65 years, Risk HT, DLP. Presented with 1 hr PTA acute chest pain then developed cardiac arrest. After ROSC activated ECMO and emergency CAG. BP 82/ 72mmHg HR 124 bpm, heart totally regular, fine crepitation both lungs. EKG showed AF with RVR 120 bpm, minimal ST elevation at II, III, aVF. Echo showed LVEF 42%, global wall HK, no significant VHD. CXR showed mild cardiomegaly, bilateral pulmonary congestion.

Decision-making: CAG via 7Fr RFA Sheath with Diagnostic catheter JL 4.0/6 Fr, JR 4.0/6Fr showed Rt dominant, LM: 30-40% stenosis distal LM, LAD: 80-90% stenosis p-mLAD c filling defect, 70-80%stenosis DG1, LCx: subtotal occlusion small OM1, RCA: 20-30% stenosis pRCA, CTO mRCA.PCI to LAD,Guiding catheter: JL 6/4 to LCA. Direct stenting with Xience pro A 3.0 x 23 mm at p-mLAD 10 atm. PCI to RCA, Guiding catheter: JR 6/4 to RCA. Turntrac can not pass through RCA then insert Fielder XT pass through CTO RCA then remove Turntrac. 2.0 x 15 mm sc balloon inflated p-mRCA upto 12 atm. Firehawk 3.0 x 29 mm deployed proximal to distal RCA 10 atm.

Abstract Body:

Conclusion: Multivessel PCI in complex and high risk patient much more safer after received adequate MCS. Multivessel PCI to eliminate of significant residual epicardial CAD may reduce ischemic outcomes but should not be considered routine PCI of lesions in the non-infarct-related vessels.



Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 22

Category: Interventional and Structural

Title: METAL FREE PCI, STATUS OF DRUG ELUTING BALLOON

Author Block: Gaurav Sardarilal Verma, SMBT HEART INSTITUTE, NASHIK, India

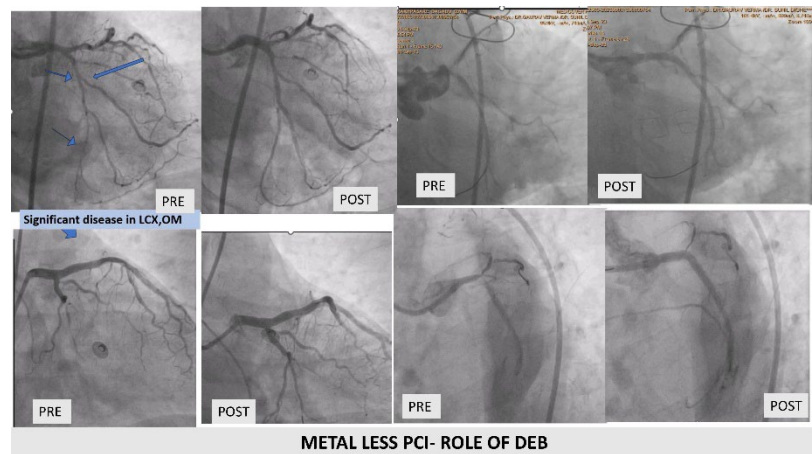
Background: DRUG ELUTING BALLOON(DEB) ARE THE LATEST TECHNOLOGY FOR REPLACING OR AVOIDING STENTS IN ANGIOPLASTY. DEB OFFERS THE ADVANTAGE OF METAL LESS PCI WITHOUT COMPLICATIONS OF DES LIKE ALLERGIC REACTIONS, LATE LUMEN LOSS, LATE STENT THROMBOSIS AND KEEPS OPTIONS OPEN FOR FUTURE.

Case: WE PRESENT FOUR CASES IN WHICH WE HAVE USED DEB IN PREFERENCE TO DES ; FIRST CASE IS A 38 YEAR OLD MALE WITH TRIPLE VESSEL DISEASE. LCX HAD ACUTE TOTAL OCCLUSION , RCA HAD A LESION IN PDA BRANCH. DEB DID JUSTICE IN LCX AND RCA. SECOND CASE IS A CASE WITH TRIPLE VESSEL DISEASE WITH DIFFUSE LESIONS IN LCX AND OM. ISSUES IN THIS CASE WERE- 1. SMALL CALIBRE VESSEL 2. DIFFUSE DISEASE OF THE LCX.3. BIFURCATION AT THE LESION WITH GOOD SIZED OM AND SMALL CALIBRE BUT CO-DOMINANT LCX. HENCE WE PREFERRED DEB. THIRD AND FOURTH CASES ARE OF INSTENT RESTENOSIS, WHERE AFTER ADEQUATE BED PREPERATION, DEB GAVE EXCELLENT RESULT.

Decision-making: DECISION OF DEB WAS BASED ON THE FOLLOWING FACTORS-1. SIZE OF VESSEL LESS THAN 2.5MM 2. LOCATION OF LESION IN MID OR DISTAL PART, SPECIALLY WITH A BIG BRANCH ARISING FROM THE LESION SITE THAN DEB IS PREFERRED3. IF THE LESION IS MORE THAN 20 MM IN A SMALL CALIBRE ARTERY, DEB WAS CHOSEN .4. IN ISR, DEB WAS PREFERRED.

Abstract Body:

Conclusion: DEB OR DRUG ELUTING BALLOON HAVE EMERGED AS A THERAPY OF CHOICE IN SMALL,DIFFUSELY DISEASED ARTERIES AND POST STENTING RESTENOSIS WITH GOOD LONG TERM RESULTS. USE OF DEB IN BIFURCATION LESIONS GIVE SAFETY IN TERM OF SIBE BRANCH PROTECTION AND LIBERTY TO USE DES IN FUTURE.



Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 23
Category: Interventional and Structural

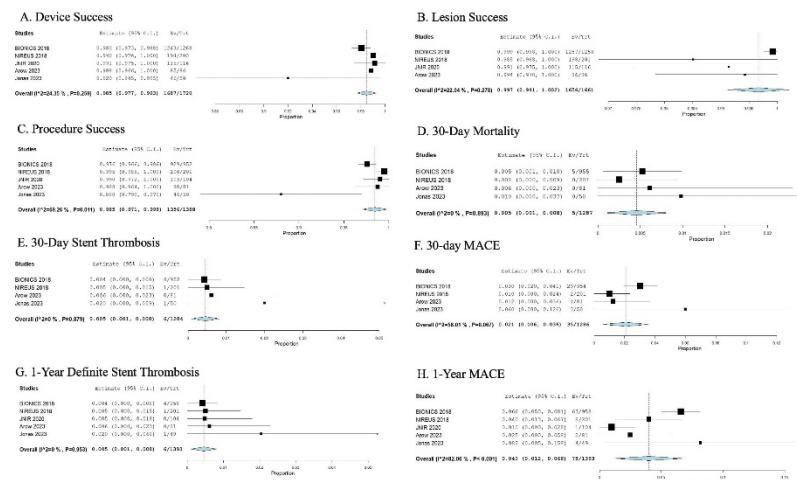
Title: EFFICACY AND OUTCOMES OF RIDAFOROLIMUS-ELUTING CORONARY STENT IN PATIENTS WITH CORONARY ARTERY DISEASE UNDERGOING PERCUTANEOUS CORONARY INTERVENTION: A PILOT SYSTEMATIC REVIEW AND META-ANALYSIS
Author Block: Hritvik Jain, Ramez M. Odat, Amanpreet Singh Wasir, Nandan Patel, Ayham M. Hussein, JYOTI JAIN, Mushood Ahmed, Aman Goyal, Maryam Saleem, Siddhant Passey, All India Institute of Medical Sciences (AIIMS), Jodhpur, Jodhpur, India, Mount Sinai Heart, NY, USA

Background: Ridaforolimus Eluting Coronary Stent System (RES) is a novel cobalt-chromium alloy-based thin-film stent coated with an mTOR inhibitor, Ridaforolimus, which inhibits stent restenosis. However, data concerning the efficacy of RES use in percutaneous coronary intervention (PCI) is limited.

Methods: A comprehensive search of the major databases was conducted to retrieve studies evaluating the RES in patients undergoing PCI. The random-effects model was used to generate pooled incidences of outcomes with 95% confidence intervals (CIs).

Results: 5 studies were included with 1394 patients (1752 coronary lesions). With RES, the pooled incidence of device success was 98.5% (95% CI: 0.977-0.993; $p < 0.001$), lesion success was 99.7% (95% CI: 0.991-1.002; $p < 0.001$), procedure success was 98.5% (95% CI: 0.971-0.998; $p < 0.001$). The pooled incidence of 30-day mortality was 0.5% (95% CI: 0.001-0.008; $p = 0.015$), 30-day stent thrombosis was 0.5% (95% CI: 0.001-0.008; $p = 0.015$), 30-day major adverse cardiovascular events (MACE) was 2.1% (95% CI: 0.006-0.036; $p = 0.006$), 1-year definite stent thrombosis was 0.5% (95% CI: 0.001-0.008; $p = 0.012$), and 1-year MACE was 4% (95% CI: 0.012-0.068; $p = 0.005$).

Abstract Body: **Conclusion:** RES deployment in PCI leads to safe procedural and clinical outcomes, with minimal risks of major adverse events. The efficacy of RES should be investigated on a larger multicentric level in randomized controlled trials.



Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 24

Category: Interventional and Structural

Title: A COMPARATIVE SAFETY STUDY OF MOTHER AND CHILD TECHNIQUE WITH SAME SIZE RADIAL SHEATH AND SAME SIZE GUIDE FOR TRANSRADIAL PCI

Author Block: Satish R. Chirde, Narendra Bachewar, Amar Wani, Shri Datta Hospital and Research Center, Yavatmal, India

Background: Transradial access (TRA) has reduced complications compared to femoral, however still has various bleeding and non-bleeding complications. Our study showed less non-bleeding complication with use of 7F radial sheath and 6F PTCA catheter (mother and child technique) for PCI as compared to 6 sheath and 6F catheter. We aimed to compare radial access related complications in 7F radial sheath and 6F PTCA catheter group vs 6F radial sheath and 6F PTCA catheter

Methods: This was retrospective comparative study of 129 cases with TRA PCI during 1 year period. Cases were divided in 2 groups. One with 7F radial cordis sheath and 6F PTCA catheter (**Mother and Child technique**) and another with 6F cordis radial sheath and 6F PTCA catheter. Various bleeding and non bleeding radial complications were compared in two groups using Fischer's exact test

Results: In 6F group radial artery spasm was seen (RAS) in 15 cases, catheter kink in 9, asymptomatic radial artery (RA) occlusion in 6 cases. In 7 F group minor RAS was seen in 3 cases, catheter kink in none, asymptomatic RA occlusion in 8 and wrist haematoma in 2 cases. Fisher's exact test showed significantly low incidences of RA spasm and catheter kink and insignificant high incidences of wrist haematoma and asymptomatic radial artery occlusion in 7F group (Table 1). None of other RA access complication were seen in any group.

Conclusion: Use of 7F sheath instead of 6F sheath, with 6F catheter, while doing TRA PTCA reduced overall adverse events, hence found to be safer.

Abstract Body:

Table1	By Fischers exact test		
Complication	7F sheath group	6F sheath Group	p-value
Radial artery Spasm	minor in 3 cases	15	0.0005472
catheter Kink	0	9	0.007644
Wrist Hematoma	2	0	0.9394
Asymptomatic Radial artery Occlusion	8	6	>0.9999999
Total number of adverse events	13	30	0.00003969
Males	58	47	
Females	10	6	

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Presentation Number:
Poster Board Number: 25
Category: Interventional and Structural
Title: UNPREDICTABLE COMPLICATION MANAGED SUCCESSFULLY DURING TRANSCATHETER AORTIC VALVE IMPLANTATION OF BICUSPID AORTIC STENOSIS
Author Block: SHABBIR ALI SHAIK, APOLLO HOSPITALS, JUBILEE HILLS, HYDERABAD., HYDERABAD, NB, India
Abstract Body:
Background: TAVI(Trans-catheter Aortic Valve Implantation) in bicuspid aortic stenosis is challenging due to asymmetrical annulus and calcified raphe.
Case: 61 year old male with severe Aortic Stenosis with left ventricular ejection fraction of 28% and STS score of 6.4% planned for TAVI after heart team discussion. CT showed calcified valve of annulus diameter 27.5mm(mean) with wide sinuses and good coronary heights.
Decision-making: After crossing the valve, balloon valvuloplasty done with 20 mm balloon. Later 26 mm Sapien 3 valve was implanted. Immediate post deployment patient developed asystole, CPR started. Aortic root angiogram showed acute occlusion of LMCA (Left Main Coronary Artery). LMCA engaged with 6F EBU guide catheter and urgent percutaneous coronary angioplasty was performed with 4x12mm drug eluting stent.
Conclusion: During TAVI of bicuspid valve apart from coronary height, width of sinuses, leaflet length other parameters like leaflet thickness and ELOD(Expected Leaflet to Osteal Distance) to be considered. ELOD is the distance between the coronary artery ostium and the corresponding aortic valve leaflet length when displaced by a transcatheter heart valve (THV). we retrospectively measured the leaflet length(left cusp) to sinus height ratio was 0.937 but ELOD was 1 mm(less than 2 predicts coronary occlusion). Such patients require upfront coronary protection with guide extension catheter with/out stent parked or leaflet modifications(BASILICA).

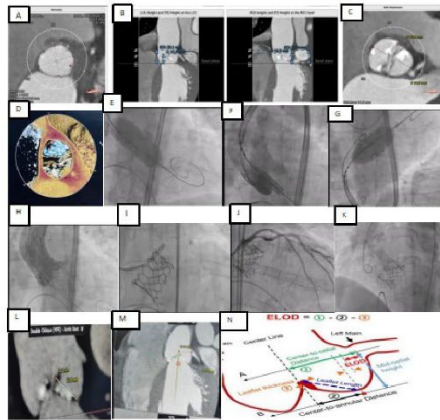


Figure 1: Bailout LMCA stenting during TAVR of bicuspid aortic stenosis. A,B,C&D) MDCT derived measurements of annulus, coronary heights, sinuses and leaflet calcium respectively, E) Balloon Aortic Valvuloplasty with 20mm Edward balloon, F&G) Implantation of 27mm Sapien 3 valve, H) Aortogram depicting acute occlusion of LMCA, I) Deployment of 4x12 mm DES in LMCA, J&K) Final aortogram, L,M) CT derived-measurements of leaflet length, thickness, centre to ostial distance & mid ostial height, N) Pictorial representation for calculating ELOD (Expected Leaflet-to-ostium Distance)

Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 26

Category: Interventional and Structural

Title: A CHALLENGING CASE OF PERCUTANEOUS TRANSCATHETER CLOSURE OF AN AORTA TO RIGHT ATRIUM TUNNEL (ARAT) IN A 3 YEAR OLD CHILD.

Author Block: Pranabananda Pal, Asit Das, Iopamudra Mishra, Ishita Majumdar, Soumya Kanti Dutta, Sunanda Ghosh, Sankar Chandra Mandal, IPGMER AND SSKM HOSPITAL, KOLKATA, KOLKATA, India

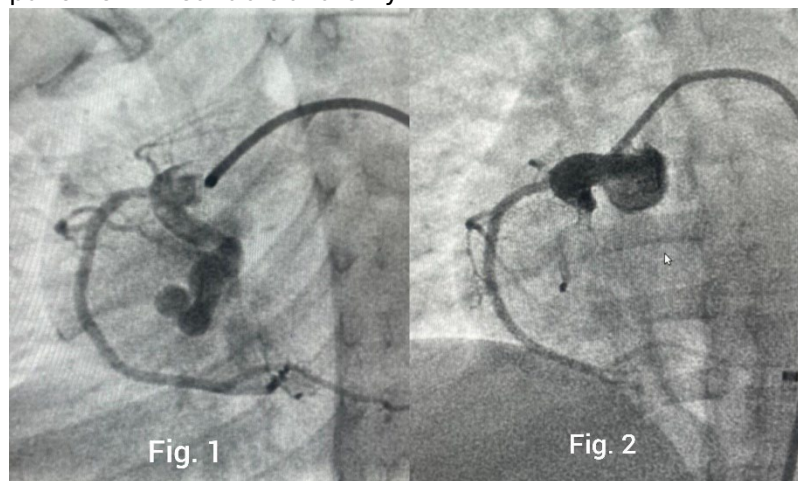
Background: Aorta- right atrium tunnel (ARAT) is very rare congenital anomaly where an abnormal communication is seen from aorta to RA. Here we present a challenging case of successful closure of ARAT in a child.

Case: A 3 year old male child presented with SOB and his physical examination revealed a continuous murmur in the upper right sternal border. On echocardiography abnormal flow within the dilated RA with continuous flow pattern was detected. Selective right coronary angiography showed a large tunnel originating from right aortic sinus, coursing downwards and terminating into the roof of RA with aneurysmal dilatations. Origin of RCA was in close proximity of the tunnel {Fig.1}.

Decision-making: The tunnel was closed percutaneously with a 06 X 08 mm duct occluder device. The obliteration of the tunnel was confirmed by aortogram. The origin of RCA was seen without any encroachment by the implanted device {Fig. 2}. The closure of ARAT should be considered as it minimizes the risks for the volume-overload, aneurysm formation, infective endocarditis and likelihood of a spontaneous rupture. Percutaneous closure method using duct occluder device can be advised if the coronary ostia origins independently from any of the coronary sinuses, the opening of the right atrial end is small and if there is no associated cardiac anomaly. The child is asymptomatic in the follow up visits after successful closure.

Conclusion: Percutaneous closure of ARAT is an excellent option in pediatric patients with suitable anatomy.

Abstract Body:



Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 27

Category: Interventional and Structural
Title: RARE CASE OF MYCOTIC ASCENDING AORTIC ANEURYSM FOLLOWING TRANSACATHETER AORTIC VALVE REPLACEMENT

Author Block: Bharat Sambyal, Nitin Patel, Prashant Panda, Yash Paul Sharma, Post Graduate Institute of Medical Education, Chandigarh, Chandigarh, India

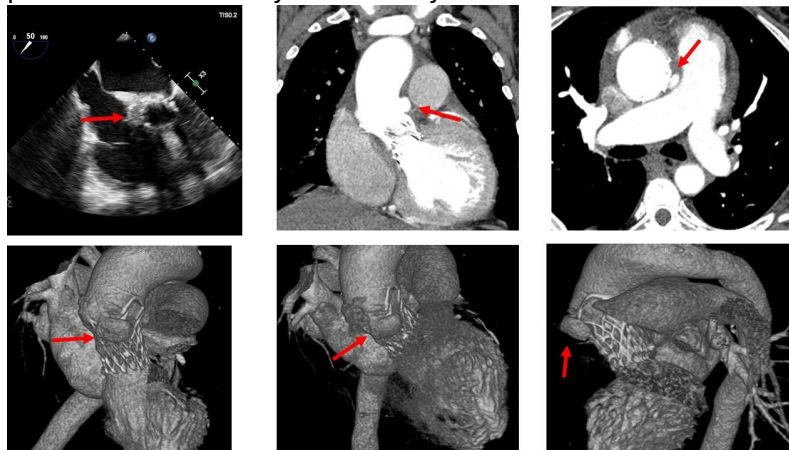
Background: Prosthetic valve endocarditis (PVE) presented as aortic mycotic aneurysm is extremely rare and there are no reported case of thoracic aortic aneurysm after transcatheter aortic valve replacement (TAVR) PVE

Case: A 67-year-old male with severe aortic stenosis underwent TAVR in June 2021, at a different center. His LVEF improved from 15% to 40%. In August he developed high-grade fever and was diagnosed with Burkholderia septicemia and treated with antibiotics for 6 weeks. Despite initial improvement, he developed a fever again after 4 weeks and sought further treatment at our referral center.

Decision-making: A 2D TTE revealed a heterogenous hyperechoic lesion and perivalvular thickening. TEE showed an aortic root abscess. CT scans indicated hepatosplenomegaly, a splenic infarct, a lung nodule, and a mycotic ascending aortic aneurysm. Blood culture tested positive for pseudomonas aeruginosa. The patient was treated with antibiotics according to sensitivity pattern (Meropenem, Levofloxacin, Amikacin) and supportive care for 4 weeks. Despite advice for surgical intervention due to unresolved root abscess, the patient declined. He was discharged on oral antibiotics after testing culture negative.

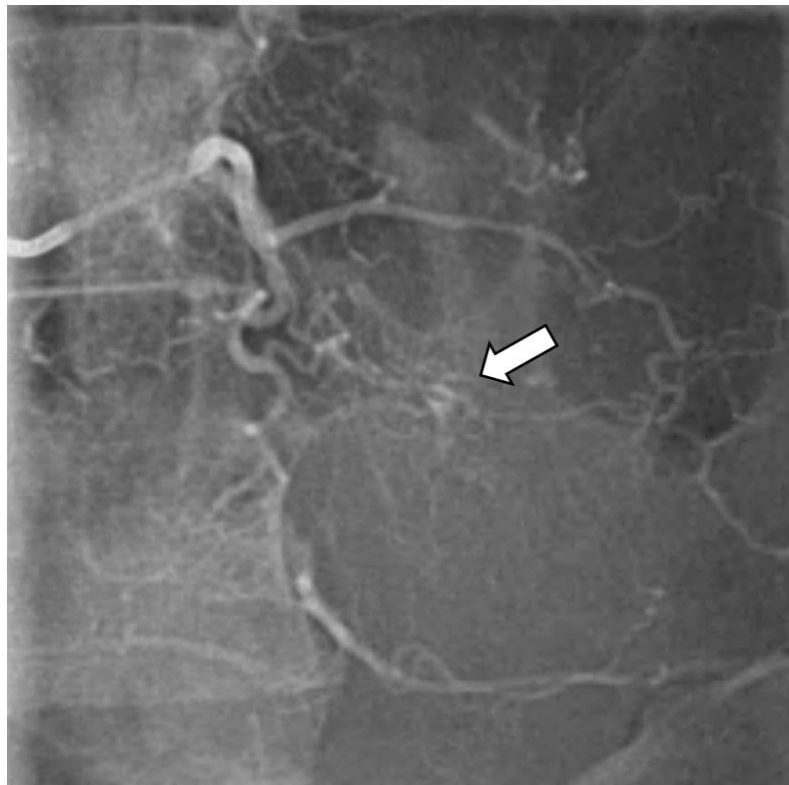
Abstract Body:

Conclusion: As the current indications are expanding for younger and lower-risk individuals, need of strict asepsis during such procedure is imperative. Transthoracic and Esophageal echo is essential tool for early diagnoses of peri prosthetic valvular mycotic aneurysm.



Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 28
Category: Interventional and Structural
Title: LIFE THREATENING RETROPERITONEAL HEMORRHAGE FOLLOWING RADIAL PCI
Author Block: Ajinkya Mahorkar, Avanti Institute of Cardiology, Nagpur, India
Background: A 71-year-old prediabetic hypertensive male with a history of myocardial infarction underwent Percutaneous Coronary Intervention (PCI) of right coronary artery.
Case: Following successful radial PCI, he developed abdominal pain and hypotension, bedside Ultrasound done indicated a retroperitoneal bleed. CT angiography revealed a leaking left lumbar artery aneurysm, embolized successfully with 500-700 micron polyvinyl alcohol particles. Despite having slow recovery requiring transfusions and dialysis, he was discharged stable and remains well at 6 month follow up.
Decision-making: While retroperitoneal hematoma (RPH) post-PCI is known, spontaneous lumbar artery bleed as its cause is rare. The etiology includes arterial aneurysms, dissection, or plaque rupture. CT angiography highlighted a leaking aneurysm from the left lumbar artery, emphasizing the importance of considering vascular abnormalities in RPH diagnosis.
Conclusion: RPH following femoral PCI is recognized, but after radial PCI, it's often overlooked delaying intervention. This case underscores the need to consider vascular abnormalities in patients with retroperitoneal hemorrhage post-PCI.

Abstract Body:



Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 29

Category: Ischemic Heart Disease

Title: SARCOPENIA AND SARCOPENIC OBESITY IN ASIAN INDIANS WITH TYPE 2 DIABETES MELLITUS AND ESTABLISHED CARDIOVASCULAR DISEASE

Author Block: Amanpreet Singh Wasir, Manish Bansal, Hritvik Jain, Jasjeet Wasir, Anuradha Joshi, Bharati Vidyapeeth (Deemed to be) University Medical College, Pune, India

Abstract Body:

Background: Sarcopenia, initially described in the geriatric population is a progressive and generalized skeletal muscle disorder characterized by a decline in muscle mass and quality leading to decreased muscle strength and/or physical performance. Sarcopenia, accompanied with adiposity, is now a well-recognized medical entity known as ‘sarcopenic obesity’ (SO). The recent recognition of sarcopenia/SO as prognostic marker for clinical outcomes has fueled extensive research, which has revealed an increasing prevalence of sarcopenia/SO. Type 2 diabetes mellitus (T2DM) is an important health care priority because of its ever-rising occurrence, and associated complications, importantly cardiovascular disease (CVD). Our study aims to determine the prevalence of sarcopenia and SO in patients with T2DM and established CVD.

Methods: A cross sectional case-control study in design, included 60 consecutive T2DM patients (30 with CVD and 30 without CVD, age 40-70 years, 80% males). Data collection included body composition analysis (bio-impedance), measurement of hand grip strength and gait-speed. The Asian Working Group For Sarcopenia (AWGS-19) guidelines were used for defining sarcopenia. Chi-square test and independent student t-test were used to study association for categorical data and continuous data respectively. $P < 0.05$ was significant.

Results: The prevalence of overall sarcopenia (including possible sarcopenia or sarcopenia) was significantly higher in subjects with CVD as compared to those without CVD (70% vs 40%; $p = 0.020$). However, though numerically greater (in subjects with CVD), there was no statistically significant difference in the prevalence of SO (30% vs 16.7%; $p = 0.222$).

Conclusion: This study showed a significantly greater prevalence of overall sarcopenia in subjects with T2DM and CVD in comparison to those without CVD. Even though no difference was found in the prevalence of SO (numerically greater in T2DM+CVD), we believe larger studies would enrich our understanding of sarcopenia and SO, which may well prove to be independent risk factors, like obesity, for defining CVD risk in patients with T2DM.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 30
Category: Ischemic Heart Disease
Title: NICORANDIL & RANOLZINE IN PREVENTING CIN IN RENAL DYSFUNCTION DURING PCI: IMMEDIATE & LONG OUTCOME
Author Block: Gyan Prakash, DR. SAIBAL MUKHOPADHYAY, DR. SAFAL, Dr. Lalita, DR. JAMAL YUSUF, Dr. Dixit Goyal, G B Pant, delhi, India

Abstract Body:

Background: Limited data available with regard to efficacy of Nicorandil in preventing CIN in mild to moderate renal dysfunction. There is physiological possibility as well as data in animal study that Ranolazine may be protective against CIN. However no human study has been done till date.

Methods: To evaluate efficacy of Nicorandil plus hydration and Ranolazine plus hydration vis-à-vis hydration alone in preventing CIN with mild to moderate renal dysfunction patients undergoing elective PCI. Randomized controlled PILOT study, conducted in GB PANT from June 2021 to December 2022.

Results: Number of CIN in control group was 19, Nicorandil 8 and Ranolazine 7. Significant association between CIN reduction and groups (P = 0.012). After Bonferroni correction, pair wise comparison showed a risk reduction of 58% in CIN using Nicorandil VS control [RR =0.42(95%CI:0.19-0.92:P=0.023)] and 63 % in Ranolazine VS control [RR=0.37(95%CI:0.16-0.839) P value= 0.012]. As per Bonferroni correction, CIN reduction with both Nicorandil and Ranolazine was statistically significant in comparison to control. Increase in S Cr at the end of 72 hrs was least in Nicorandil as compared to other two groups. Median CRP value at 72 hrs was also less in Nicorandil as compared to other two groups (P=0.641). Adverse Events were similar across three groups even on 1 year followup.

Conclusion: Nicorandil and Ranolazine have protective effect against CIN. Efficacy of Ranolazine in protecting against CIN has been established in world literature for the first time. In high risk patients like diabetes with ACS and renal dysfunction, undergoing coronary intervention, periprocedural Ranolazine can be routinely added to prevent CIN

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 31
Category: Ischemic Heart Disease

Title: INFLUENCE OF REMNANT LIPOPROTEIN PARTICLE CHOLESTEROL ON NON-TARGET LESIONS PROGRESSION IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION: A SINGLE-CENTRE OBSERVATIONAL COHORT STUDY

Author Block: li liang, Department of Cardiology, Xuzhou New Health Geriatric Hospital, Xuzhou Medical University, Xuzhou, People's Republic of China

Abstract Body:
Background: The LDL-C is the primary lipid therapy target for coronary artery disease (CAD) after PCI. However, progression of coronary atherosclerosis occurs even LDL-C controlled well. This study aims to elucidate the relationship between remnant lipoprotein particle cholesterol (RLP-C) and the progression of non-target lesions (NTLs) in patients with well-controlled lipid levels after PCI.
Methods: This retrospective study included 769 CAD patients who underwent PCI between May 1,2016, and May 31,2019, and followed up coronary angiography (CAG) within 6 to 24 months thereafter. LDL-C levels were used to assess lipid control. Patients were categorized into progression and non-progression groups based on the assessment of NTLs progression via quantitative coronary angiography (QCA). Multivariate Cox regression analysis identified RLP-C as an independent risk factor for NTLs progression. Using the ROC curve, an optimal cutoff value for RLP-C was determined, and patients were stratified into two groups. Propensity score matching balanced confounding factors between groups, and Log-rank tests compared Kaplan-Meier curves for overall follow-up to assess NTLs progression.
Results: The control of LDL-C remains inadequate in CAD patients after PCI. Multivariate Cox analysis showed that RLP-C was an independent lipid risk factor for NTLs progression when LDL-C controlled well. The ROC curve for RLP-C demonstrated an AUC of 0.721 (SE 0.044, 95% CI=0.635-0.807, $P<0.001$), with an optimal cutoff of 0.555 mmol/L for predicting NTLs progression. Following propensity score matching, Kaplan-Meier curves illustrated a significantly higher cumulative rate of NTLs progression in patients with RLP-C levels ≥ 0.555 mmol/L (log-rank $P<0.001$; HR 4.175, 95% CI=3.045-5.723, $P<0.001$) compared to those with RLP-C levels <0.555 mmol/L. Elevated RLP-C levels were associated with high Triglyceride (TG) concentrations, diabetes mellitus (DM), and increased risk of revascularization.
Conclusion: The RLP-C could be a significant residual risk factor for cardiovascular disease progression after PCI. Lowering RLP-C below 0.555 mmol/L may assist in mitigating the progression of NTLs.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 32
Category: Ischemic Heart Disease

Title: ASSOCIATION BETWEEN INFLUENZA VACCINATION AND PROGNOSIS IN PATIENTS WITH ISCHEMIC HEART DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Xiao Liu, Jiayu Zhang, Peng Yu, Huilei Zhao, Sun Yat-sen Memorial Hospital of Sun Yat-sen University, Guangzhou, People's Republic of China, the Second Affiliated Hospital of Nanchang University, Nanchang, People's Republic of China

Abstract Body:
Background: Substantial epidemiological evidence suggests that influenza leads to cardiovascular events in patients with established cardiovascular diseases. However, the effect of influenza vaccine on the prognosis of patients with ischemic heart disease (IHD) is unclear.
Methods: We searched eligible randomized controlled trials in PubMed, Cochrane and Embase with a search date of March 11, 2024, for investigating effect of influenza vaccine on prognosis of patients with IHD. Effect sizes were pooled using random-effects models. Trail Sequential Analysis was used to evaluate the reality and authenticity.
Results: Five randomized controlled trials with a total of 5,659 patients with IHD were included. Use of influenza vaccine reduced the risk of major cardiovascular events (risk ratio [RR] 0.67, 95% confidence interval [CI] 0.52-0.87, number-needed-to-treat, high certainty), cardiovascular death (RR 0.55, 95%CI 0.35-0.87, moderate certainty), all-cause mortality (RR 0.58, 95%CI 0.40-0.84, high certainty) and MI (RR 0.66, 95%CI 0.46-0.93, high certainty) in patients with IHD compared with control. No benefit was observed in hospitalization for HF (RR 0.91, 95%CI 0.21-3.99, moderate certainty) and revascularization (RR 0.59, 95%CI 0.10-3.45, moderate certainty). The number needed to treat to avoid 1 event was 37 for MACE, 56 for cardiovascular death, 67 for MI, 41 for all-cause death. Trail sequential analysis showed the benefit of influenza vaccine in reducing MACE was conclusive.
Conclusion: These studies suggested that the use of influenza vaccine may reduce the risk of MACE in patients with IHD.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 34
Category: Ischemic Heart Disease
Title: CORONARY ARTERY ANEURYSM PRESENTING AS A NON ST ELEVATION MYOCARDIAL INFARCTION
Author Block: Kassandra Ríos Félix, Pablo F. Hernandez Castillo, Eduardo Almeida, Karina Lupercio, Guillermo Saturno Chiu, INSTITUTO MEXICANO DEL SEGURO SOCIAL, MEXICO CITY, Mexico
Background: Coronary aneurysms are a rare coronary artery disease, the initial presentation as an acute myocardial infarction represented a diagnostic and therapeutic challenge
Case: A 43 year old woman with no prior cardiovascular history presents to the emergency room with chest pain. The initial ECG shows QS waves in leads V1 to V3 with inverted T waves from V4 to V6 DI and aVL, initial high sensitivity troponin T of 36 pg/ml. The patient was diagnosed with non ST elevation myocardial infarction, subsequently taken to cardiac catheterization where a saccular coronary aneurysm was found in the proximal segment of anterior descending artery, Coronary intravascular ultrasound was performed with findings of a 2.6x1.8mm coronary aneurysm with the presence of hematoma.
Decision-making: A transthoracic echocardiogram was performed with findings of basal inferoseptal, basal and mid anteroseptal, mid and apical anterior, apical inferior hypokinesis. LVEF 42%. Coronary CT with evidence of a saccular aneurysm with anterosuperior dome of the left main. Medical treatment was decided and started with acetylsalicylic acid, clopidogrel, atorvastatin, and bisoprolol
Abstract Body: **Conclusion:** Aneurysmal dilation of the coronary arteries can be found incidentally in up to 5% of patients who undergo coronary angiography. Clinical presentations vary from incidental findings as well as acute coronary syndrome. Due to the lack of randomized trials and current recommendations, approaching these patients can present a dilemma.



Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 33
Category: Ischemic Heart Disease
Title: “SIMPLICITY IS THE ULTIMATE SOPHISTICATION”: A NOVEL BEDSIDE RISK-PREDICTION MODEL FOR IN-HOSPITAL MORTALITY IN PRIMARY PCI INCORPORATING LACTATE/ ALBUMIN RATIO
Author Block: Prayaag Kini, Reeta Varyani, SRI SATHYA SAI INSTITUTE OF HIGHER MEDICAL SCIENCES, Bengaluru, India

Abstract Body:

Background: Mortality risk prediction models following primary PCI suffer from skewed and imbalanced data sets as also involve expensive lab parameters like BNP etc and specialised ECHO techniques and have not been tested in Indians. Our study aimed to establish a simple nomogram predicting in-hospital mortality (upto 14 days) in patients undergoing primary PCI using basic ECG, ECHO and lab parameters **that could be used at the bedside**.

Methods: We studied 425 patients undergoing primary PCI at two apex centres from Jan 21 2015, Jan 1 2020 undergoing primary PCI. The risk model was generated by logistic regression with the stepwise backward method and Machine Learning, while calculating Odds ratios (OR) and 95% CI for in-hospital mortality. It has been forward validated over the past 48 months in 122 patients till March 2024.

Results: Six features generated by Regression and two Machine Learning models (KNN, XG Boost) were selected to build the “ **SAVE- MI**” **nomogram** and weightage factor given as per contribution (using SHAPley analysis): ICU Serum Lactate/ Albumin > 2.2 anytime in hospital course (WF: 3.5), **A**W- STEMI with LBBB(WF: 3.0), Post PCI **M**ycocardial blush grade < 2(WF: 3), In-hospital **V**asotrope-Inotrope Index > 40(WF: 3.0), Insulin-requiring DM(WF: 3.0) anytime in hospital course, and admission MAPSE < 7 mm by **E**CHO (WF: 2.5). AUROC was 0.881 (95% CI: 0.63-0.956). On generating tertiles (T1 to T3) of the score of T1 < 9.5, T2 between 9.5- 12.5 and T3 > 12.5 of the total 18 points, *Low, Intermediate and High risk cohorts* were separable with likelihood of mortality being 5.5%, 21.5% and 39.5% respectively for the tertiles. In the forward Validation cohort the score had an excellent predictive accuracy of 83% agreement (goodness-of-fit) and **outperformed both the PAMI risk score and CADILLAC scores (which use different input variables)** applied to the same population, **but without losing out on accuracy**.

Conclusion: Our simplified and novel “ Bedside” 6- parameter SAVE-MI risk score derived from a representative cross-sectional population **for bedside prediction of in-hospital mortality** after Primary PCI uses “easy -to- evaluate” BEDSIDE parameters and will help risk stratification in real-world practice.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 35
Category: Ischemic Heart Disease
Title: A RARE CASE OF PROLONGED SINUS ARREST AFTER CORONARY INTERVENTION
Author Block: Yajun Xue, Beijing tsinghua changgung hospital, BEIJING, People's Republic of China

Abstract Body:

Background: Occlusion of sinus node artery (SNA) is a rare complication in PCI. It has been previously reported in the treatment of RCA but not left coronary artery, especially in LAD

Case: 56-year male patient was selected coronary angiography showed a 95% stenosis lesion with unstable atherosclerotic plaque in proximal LAD (Fig2). His ECG showed sinus rhythm and right bundle branch block (Fig1). A remarkable SNA originating from the proximal normal LCX (Fig3). When two continuous stents were deployed in LAD, the patient felt mild chest pain and the monitor showed junctional rhythm with decreasing HR to 40b/m. Repeated contrast injections showed slow flow in OM and SNA, with dye retention in distal sinus branch (Fig4). With repeat intracoronary nitroglycerin and tirofiban, the Thrombolysis In Myocardial Infarction (TIMI) flow of LCX-OM gradually recovered (Fig5), but sinus rhythm did not emerge (Fig6). His chest pain syndrome gradually relieved within the next day. However, junctional rhythm persisted in the following 10-days ECG and ambulatory monitoring before discharge (Fig7)

Decision-making: The patient did not complain of any discomfort and a stable sinus rhythm (Fig8) was achieved in a 6-weeks follow up visit. Interestingly, accidental sinus pause, junctional rhythm and sinoatrial block persisted for eight weeks in his Holter (Fig9)

Conclusion: This is the first case report of prolonged sinus arrest during stent implantation in LAD. Preventing acute occlusion of SNA is crucial during PCI in LAD

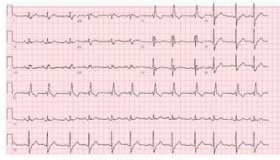


Fig 1 ECG before



Fig2.LAD before



Fig3 LCX before



Fig7. ECG POST PCI 10-days



Fig 4. no-reflow in OM



Fig5. recover in LCX

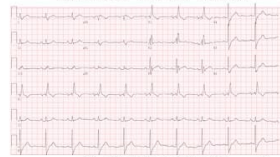


Fig8.ECG POST PCI 6-weeks

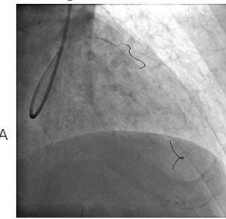


Fig6. dye in SNA



Fig9. HOLTER for post PCI 8-weeks

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 36

Category: Ischemic Heart Disease

Title: SPONTANEOUS CORONARY ARTERY DISSECTION IN A YOUNG MALE WITH ANTIPHOSPHOLIPID SYNDROME

Author Block: Brenda Hernandez, Pablo Hernandez Castillo, Guillermo Saturno Chiu, Eduardo Almeida, Karina Lupercio, Instituto Mexicano del Seguro Social, Mexico City, Mexico

Abstract Body:

Background: Spontaneous coronary artery dissection is a rare cause of acute coronary syndrome, it represents 0,1-4% of all cases.

Case: A 36 year old man with history of hypertension, primary antiphospholipid syndrome with triple positive marker and history of deep venous thrombosis in management with acenocoumarin. He presented to the emergency room with chest pain. An ECG revealed a QS pattern in the inferior leads and negative T wave from V4 to V6. The echocardiogram reported inferior and inferolateral akinesia in basal and middle segments with negative biomarkers.

Decision-making: A cardiac scintigram with Tc99 was performed. It reported apical and septal ischemia of moderate degree and an inferior infarction. Therefore, an angiography was performed, we found spontaneous coronary dissection type B of the right coronary artery, without obstruction or blood flow compromise. He was started with acetylsalicylic acid, clopidogrel and bisoprolol. Considering his medical background, he continued with acenocoumarin.

Conclusion: Spontaneous coronary artery dissection continues to be underdiagnosed and requires high suspicion; medical therapy was chosen in this patient after consideration of: length of the dissection, absence of symptoms at the time of angiography and blood flow obstruction. Our objective is to highlight the possible association between antiphospholipid syndrome and spontaneous coronary artery dissection, as this patient had no other risk factors for atherosclerotic ischemia.



Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 37

Category: Ischemic Heart Disease

Title: SAFETY & EFFECTIVENESS OF FDC ATORVASTATIN, CLOPIDOGREL & ASPIRIN ON LIPID PROFILE IN POST-PCI SETTINGS OF INDIA: POST APPROVAL, OBSERVATIONAL STUDY (ELEVATE STUDY)

Author Block: KAMAL SHARMA, Janak Bhavsar, Prajakta Nidhankar, Ashutosh Kakkad, Narendra Chouksey, [Krishnaprasad K](#), ELEVATE Study Group, SAL Hospital, Ahmedabad, India

Background: ASCVD in the Asian subcontinent is multifactorial with phenotype traits involving T2DM and HTN for high association with morbidity & mortality including stent thrombosis and/or recurrent thromboembolic events in post-PCI settings. We assessed utilization of high intensity statin as atorvastatin and DAPT induced for ACS cases with and without High bleed risk in the real world settings of India.

Methods: Post-approval, observational, single arm study conducted involving 3,686 patients at 523 sites with central IEC approval for study documents in accordance with ICH-GCP & Helsinki Declaration. Descriptive & analytical statistics was undertaken for endpoint analysis of lipid profile at 4 weeks using QuickCalcs GraphPad Prism Software Inc. V9.0.0.

Results: Per protocol analyses (n=3,686) conducted with mean Age (58.3±11.4 y), Gender (M=2,648, F=1,038), weight (73.4 ± 11.5 kg). Patients presented with unstable angina (n=1,166, 31.6%), NSTEMI (n=1,250, 33.9%) & STEMI (n=1,270, 34.5%). Common risk traits or co-morbidities included Hypertension (n=2,557, 69.4%), diabetes (n=1,677, 45.5%) & CKD (n=551, 14.9%). 946 (25.6%) patients had prior history of PCI stent. Ongoing treatment before the index event included statin (632, 17.1%); aspirin (2,329, 63.2%); ARB (198, 5.4%). On discharge, 2,303 (62.5%) patients were prescribed atorvastatin 40mg/clopidogrel 75mg/aspirin 75 mg & 1,383 (37.5%) atorvastatin 10 or 20mg/clopidogrel 75mg/aspirin 75 mg. At 4W, 889 (24.1%) patients were switched to Atorvastatin/Clopidogrel treatment & remaining patients continued initial FDC having aspirin. The mean reduction in LDL-C and non-HDL-C was noted as -31.5±9.9 mg/dl and -34.1±8.7 mg/dl, respectively at 4W. In clinical cases with HBR (CKD, stroke & anaemia) (n=1083), mean reduction in LDL-C and non-HDL-C was noted as -42.4±9.9 mg/dl and -45.62±8.7 mg/dl, respectively at 4W. TEAEs were observed as musculoskeletal pain, GI intolerance in 69 (1.87%) cases that were mild to moderate intensity with no observable SAEs.

Abstract Body:

Conclusion: Atorvastatin/Clopidogrel/Aspirin was safe with significant reduction in LDL-c and non-HDL-c following clinical use as induction strategy in Post-PCI settings.

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 38

Category: Multimodality Imaging

Title: AN UNUSUAL PRESENTATION OF NOT SO UNCOMMON CARDIAC COMPLICATION

Author Block: Aswin Ganesh, Medanta the medicity, Gurugram, India

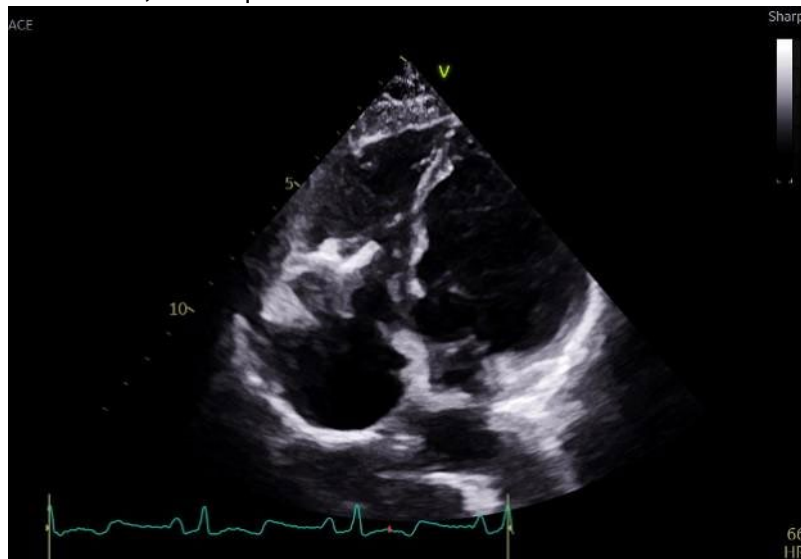
Background: Coronary stent infection is a rare complication and carries high mortality and morbidity, which often requires open surgery.

Case: A 55 year old lady with previous history of Percutaneous coronary intervention in 2018, presented to the hospital with complaints of fever with chills along with productive cough and dyspnea on exertion functional class 2, she had remained symptom free after PCI and been fully compliant with treatment. Clinical examination at the time of presentation was unremarkable. Laboratory examination revealed anemia and raised Total leukocyte count. In view of her previous cardiac history cardiac imaging studies were performed.

Decision-making: Transthoracic echocardiogram was performed, it showed echogenic mass in the region of right atrioventricular groove. The mass appeared to be cystic with multiple septations, a bright tubular structure seen within the mass likely to be stent. Based on the Echo findings she was further evaluated by CT coronary angiography which showed large epicardial multiloculated abscess encasing the stent in posterior descending artery and PET scan which showed high FDG uptake.

Conclusion: Patient was diagnosed with RCA stent abscess, for which she underwent open surgery for stent removal and drainage of the abscess.

Abstract Body: Histopathological examination, it showed growth of *Serratia marcescens*, she was treated with culture specific antibiotics. Post operative period was uneventful, subsequent echo's was within normal limits



Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 39

Category: Prevention and Health Promotion

Title: INVESTIGATING THE IMPACT OF LIFESTYLE ON CAROTID INTIMA MEDIA THICKNESS THROUGH A UK BIOBANK CROSS-SECTIONAL STUDY

Author Block: Sayan Mitra, Raaj K. Biswas, Andrea Nova, Petra Hooijenga, Andrius Masedunskas, Sophie Cassidy, Cynthia M. Kroeger, Luigi Fontana, The University of Sydney, Sydney, Australia, University of Pavia, Pavia, Italy

Abstract Body:

Background: Carotid intima-media thickness (CIMT) is as a vital indicator of cardiovascular disease (CVD) risk, linked to the ageing of blood vessels, influenced by HbA1c levels, dyslipidaemia, and hypertension. Its importance stems from its capability to serve as an intermediary marker for CVD risk, offering insights into the progression of cardiovascular well-being.

Methods: This cross-sectional study aimed to explore the relationship between CIMT and a combined biomarker (CRBI) score to improve risk evaluation and inform on prevention and treatment plans for CVD. By investigating this link, the study intends to emphasise the predictive value of CIMT in assessing cardiovascular health. Linear regression was used to explore the association between CIMT and lifestyle risk factors.

Results: We analysed 29,292 participants from the UK Biobank (48% female, mean age 64), with valid CIMT measurements ($687.11 \pm 124.28 \mu\text{m}$) taken in 2014. Key predictors of CIMT included age ($\beta=6.05$) and being male ($\beta=13.02$). Factors such as body weight ($\beta=0.84$) and vigorous physical activity ($\beta=10.66$) showed a positive relationship with CIMT. Current smokers had a more pronounced association with CIMT ($\beta=14.47$) compared to those who had quit smoking ($\beta=9.21$). For females, significant predictors were age ($\beta=6.07$), body weight ($\beta=0.71$), CRBI score ($\beta=9.95$), and smoking history ($\beta=6.64$), while high CRP levels were linked to lower CIMT ($\beta=-0.61$). For males, age ($\beta=6.04$), body weight ($\beta=0.95$), CRBI score ($\beta=10.79$), and smoking history were significant, with past smokers showing a more significant impact ($\beta=11.67$) and robust physical activity being associated with higher CIMT ($\beta=18.73$).

Conclusion: The outcomes of this study underline the influence of lifestyle choices on vascular health, indicating that a physically active lifestyle, weight control, and non-smoking can beneficially impact CIMT, thus lowering CVD risk. The findings confirms the importance of weight control for vascular health in various populations and shows how abnormal biomarker levels increase CIMT. This study improves insights into factors affecting CIMT and heart health, advocating for focused lifestyle adjustments to lower CVD risk.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 40
Category: Prevention and Health Promotion

Title: COMPARISON OF ONLINE TRAINING WITH HANDS-ON MANNEQUIN-BASED SKILL TRAINING ON BASIC LIFE SUPPORT KNOWLEDGE AND SKILLS AMONG MEDICAL STUDENTS IN INDIA
Bhavik Bansal, Dhruv Jindal, Madhur Singhal, Amritesh Grewal, Maanit Matravadia, Hardik Gupta, Anju Gupta, Rashmi Ramachandran, Nishkarsh Gupta, Ambuj Roy, All India Institute of Medical Sciences, New Delhi, Delhi, India

Author Block:

Background: Sudden cardiac arrest remains the leading global cause of death. High-quality CPR is crucial for improving patient outcomes. The introduction of online BLS training has become increasingly important after the pandemic.

Methods: This randomized controlled study involved 108 medical students. Participants were divided into two groups: Group 1 received online training, while Group 2 underwent mannequin-based training. Compression depth and rate were objectively measured using an AmbuMan CPR training mannequin, and participants were assessed using a skill-based checklist and relevant clinical vignettes.

Abstract Body: **Results:** Both groups had comparable baseline knowledge. However, Group 2 exhibited significantly higher post-intervention knowledge assessment and skill-based checklist scores. Moreover, the range of mean compression depth [36.28 (13.84) vs 51.6 (8.7), $P < 0.001$] and median rate [110; IQR(87.5-129.50) vs. 123.0 (111.0-133.0), $P = 0.012$] for effective CPR was better in mannequin trained participants. Group 2 participants demonstrated superior skills across all checklist items, with notable differences in pre-compression and compression steps. Scene safety checks (62%), compression rate (44%), and compression depth (48%) showed the largest improvements, while steps involving AED usage had minimal enhancements.

Conclusion: Hands-on mannequin-based training was significantly more effective than online training in teaching BLS skills to novice medical

students.

Outcome Variable	Group 1 (n = 53)	Group 2 (n = 55)	MD [95 % CI]	p-value
Gender (M/F), n	34/19	26/29	NA	—
Baseline Knowledge Score (out of 20), Mean (SD)	8.2(3.0)	8.4(2.7)	-0.25[-1.33 to 0.83]	0.65 ^f
Depth of Compression (in mm), Mean (SD)	36.28(13.84)	51.6(8.7)	-15.34[-19.74 to -10.95]	<0.001 ^f
Rate of Compression (/min), Median (IQR)	110 [87.5 to 129.50]	123.0[111.0 to 133.0]	-12.0[-21.0 to -2.0]	0.012 ^h
Skill Checklist Score (out of 10)	5.50[4.0 to 7.0]	9.0[8.0 to 9.50]	-3.50[-4.0 to -2.50]	<0.001 ^f
Post Intervention Knowledge Score (out of 20)	11.0(2.7)	12.8(2.4)	-1.80[-2.79 to -0.82]	<0.001 ^h

Mean (Standard deviation), Median[25th to 75th percentile]; MD=Mean Difference and Median Difference;

^fMann Whitney U test; ^hUnpaired Student t test;

Hodges Lehmann method was applied for Median Difference and its 95% Confidence Interval

Characteristic	Overall, N = 108	Group 1, N = 53	Group 2, N = 55	Difference ^l	p-value ^l
Checks scene safety, n (%)	69 (64%)	17 (32%)	52 (95%)	-62%	<0.001
Checks responsiveness, n (%)	85 (79%)	34 (64%)	51 (93%)	-29%	0.001
Calls for help, n (%)	72 (67%)	26 (49%)	46 (84%)	-35%	<0.001
Checks breathing and pulse, n (%)	90 (83%)	40 (75%)	50 (91%)	-15%	0.10
Identifies the correct site for chest compressions, n (%)	88 (81%)	35 (66%)	53 (96%)	-30%	<0.001
Compressions at appropriate rate, n (%)	59 (55%)	17 (32%)	42 (76%)	-44%	<0.001
Compressions at appropriate depth, n (%)	59 (55%)	16 (30%)	43 (78%)	-48%	<0.001
Allows chest recoil before new compression, n (%)	81 (75%)	30 (57%)	51 (93%)	-36%	<0.001
Minimizes interruptions, n (%)	83 (77%)	35 (66%)	48 (87%)	-21%	0.033
Switches on AED, n (%)	97 (90%)	45 (85%)	52 (95%)	-9.6%	0.25
Correct placement of pads, n (%)	81 (75%)	38 (72%)	43 (78%)	-6.5%	0.74
Ensures safety of victim while using AED, n (%)	92 (85%)	41 (77%)	51 (93%)	-15%	0.080 ^m
Delivers Shock while using AED, n (%)	98 (91%)	45 (85%)	53 (96%)	-11%	0.12
Resumes CPR immediately after AED, n (%)	89 (82%)	38 (72%)	51 (93%)	-21%	0.016
^l 3-sample test for equality of proportions without continuity correction					

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 41

Category: Prevention and Health Promotion

Title: GLOBAL BURDEN OF CARDIOVASCULAR DISEASE ATTRIBUTABLE TO SUGAR-SWEETENED BEVERAGES IN MIDDLE ADULTS, 1990-2019
Xiao Liu, Jie Bai, Xinrui Qi, Peng Yu, Sun Yat-sen Memorial Hospital of Sun Yat-sen University, Guangdong, People's Republic of China, the Second Affiliated Hospital of Nanchang University, Nanchang, People's Republic of China

Author Block:

Abstract Body:

Background: Cardiovascular disease (CVD) presents a significant burden on the middle-aged population. Sugar-sweetened beverages (SSBs) have been identified as an emerging risk factor for CVD.

Methods: Extracting data from the Global Burden of Disease and Risk Factors Study 2019, we calculated age-standardized rates (ASRs) for disability-adjusted life years (DALYs) and deaths attributed to CVD associated with high consumption of SSBs from 1990 to 2019. Examination of temporal patterns involved the determination of the average annual percentage change (AAPC) from 1990 to 2019.

Results: In 2019, the global death number of CVD attributable to SSBs in middle adults reached 51,135 (37,763 in 1990), with an ASR of 1.91 (2.75 in 1990) per 100,000 population. The global DALY number reached 1,858,372 (1,354,390 in 1990), with an ASR of 69.71 (97.98 in 1990). The global number of deaths (36,464) and DALYs (1,326,836) was more than twice as high for men as for women. Areas with low and low-middle sociodemographic index exhibited higher DALYs and deaths burden. There existed a negative linear correlation between sociodemographic index and ASRs of deaths ($R = -0.10$, $P = 0.010$) as well as DALYs ($R = -0.09$, $P = 0.031$). DALYs due to CVD were disproportionately higher in countries with lower sociodemographic index in 2019 according to an analysis of inequalities.

Conclusion: Worldwide, SSBs are responsible for more DALYs and deaths related to CVD in middle-aged adults over the last 30 years, particularly affecting men and countries with a low sociodemographic index, despite a decrease in the incidence across many regions. Oceania and Central Asia experienced the highest SSBs associated CVD burden.

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 42

Category: Prevention and Health Promotion

Title: COMPARISON OF CARDIOVASCULAR COMPLICATIONS DUE TO COVID-19, RSV AND INFLUENZA IN HOSPITALIZED CHILDREN AND YOUNG ADULTS

Author Block: Bishes Khanal, Sagya Khanal, Laxmi Vilas Ghimire, Kathmandu Medical College and Teaching Hospital, Sinamangal, Kathmandu, Nepal, Nepal Medical College and Teaching Hospital, Attarkhel, Kathmandu, Nepal

Abstract Body:

Background: Respiratory viral infections are linked to cardiovascular complications. We aim to study cardiovascular complications due to COVID-19, RSV, and influenza.

Methods: We analysed data from hospitalized children and young adults (≤ 21 years) from 2020 using the National Inpatient Sample (NIS). Individuals hospitalized for COVID-19, RSV, and influenza, and weighted data were used to compare cardiovascular complications.

Results: Of 108,715 respiratory virus admissions, 34,270 were from COVID-19, 25,435 from influenza and 49,010 from RSV. Myocarditis was higher in COVID-19 [1.5%, n=505] as compared to influenza [0.3%, n=80] and RSV [0.1%, n=30]. In the adjusted logistic regression, the risk of myocarditis was 82% lower in influenza aOR=0.18(0.09-0.34) $P < 0.001$, and 89% lower in RSV aOR=0.11(0.04-0.26) $P < 0.001$ as compared to COVID-19. Heart block was higher in COVID-19 [1.1%, n=385] versus influenza [0.5%, n=130] and RSV [0.3%, n=160]. After adjusting for confounders for heart block, compared to COVID-19, influenza had 57% lower risk aOR= 0.46(0.27-0.78) $P = 0.004$, and RSV had 52% lower risk aOR=0.48(0.27-0.87) $P = 0.015$. Tachyarrhythmias, cardiac arrest, and mortality were higher in COVID-19 in descriptive analysis but insignificant in multivariable logistic regression. Table

Conclusion: Individuals with COVID-19 infection face higher cardiovascular complications (myocarditis and heart block) as compared to influenza and RSV,

highlighting the need for preventive measures.

Logistic regression of cardiovascular complications among respiratory virus infection
(Taking COVID-19 as reference).

Complications		Unadjusted Odd's Ratio (95% CI)	P Value	Adjusted Odd's Ratio (95% CI)	P Value
Cardiac Complications					
Myocarditis	Reference (Covid-19)	-			
	Influenza	0.21 (0.12-0.35)	0.000	0.18 (0.10-0.34)	0.000
	RSV	0.40 (0.17-0.93)	0.000	0.11 (0.04 -0.26)	0.000
Heart Block	Reference (Covid-19)	-			
	Influenza	0.45 (0.28-0.70)	0.000	0.46 (0.27-0.78)	0.004
	RSV	0.28 (0.20-0.43)	0.000	0.48 (0.26-0.86)	0.015
Tachyarrhythmia	Reference (Covid-19)	-			
	Influenza	0.58 (0.41-0.80)	0.001	0.75 (0.52-1.09)	0.138
	RSV	0.43 (0.32 -0.57)	0.000	0.95 (0.62 -1.44)	0.813
Sudden Cardiac arrest	Reference (Covid-19)	-			
	Influenza	0.48 (0.25-0.94)	0.034	0.48 (0.20-1.12)	0.090
	RSV	0.61 (0.37-1.01)	0.055	0.54 (0.27-1.05)	0.071

Session Title: **Saturday Morning Poster Session**

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 43

Category: Prevention and Health Promotion

Title: ANALYZING THE RISING BURDEN OF HEART DISEASES IN LOWER OR MIDDLE-INCOME COUNTRIES

Author Block: Shaurya Kamboj, Swaiman Singh, Aviraj S. Riar, Adhish Beri, Shreyjit Kaur, Akshita Bhalla, Tanveen K. Gill, Udaiveer S. Gill, Harnoor Singh, Kamaldeep S. Sidhu, Jaspreet Kaur, Japmeher Kaur, Jaskaran Singh, Kamalpreet Singh Walia, Harpran Deol, Mayo Clinic, Rochester, MN, USA, DMC, Ludhiana, India

Abstract Body:

Background: Prevalence of non-communicable diseases (NCDs) is on a swift rise in Lower or Middle Income Countries, particularly in India. This surge substantially escalates disability rates among populations and imposes a heavier burden of healthcare costs

Methods: A cross-sectional, population-based survey was conducted to investigate the factors contributing to medical non-adherence in underserved regions of India from 2020 to 2023. 130,284 participants were enrolled between 2020-23. Subjects were monitored through in-person and telephone surveys. The study explored various factors including patient characteristics, medication regimen, healthcare provider factors, and health system dynamics to discern the underlying reasons for noncompliance with overall medical care.

Results: Prevalence of diabetes, hypertension, obesity, and dyslipidemia were 8.8%, 42.7%, 19.8%, and 43.5%, respectively, in our surveyed population. Medication non-compliance stood at 51.4%. A significant factor contributing to medication non-adherence was the socioeconomic background, with an inability to afford medications being a major concern ($p < 0.05$), affecting 47,175 (71.0%). Additionally, poor health literacy regarding the disease and a lack of understanding of the medication benefits, indicative of inadequate medical professional-patient communication, were significant factors for noncompliance ($p < 0.05$). Another crucial factor was the inability to recognize medications due to labeling issues in the local language or patients' literacy levels, affecting 81% of non-compliant patients ($p < 0.05$). Lack of identifiable symptoms from the disease being treated also contributed to noncompliance ($p < 0.05$). Furthermore, noncompliant patients were less likely to receive follow-up from doctors after initiating medication compared to compliant patients (36.3% vs. 5.7%, $p = 0.002$)

Conclusion: Our research highlights alarming trends of non-communicable diseases (NCDs) in India, coupled with subpar medication adherence among patients. Urgent measures are warranted to enhance widespread dissemination of knowledge, particularly in local languages, pertaining to NCDs and medications

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 44
Category: Prevention and Health Promotion

Title: ASSESSING THE NUMBER OF PREVENTABLE DEATHS DUE TO CARDIOVASCULAR DISEASES ATTRIBUTABLE TO HYPERTENSION IN FEMALES: A CROSS-SECTIONAL ANALYSIS FOR 704 INDIAN DISTRICTS
Anoushka Arora, Siddhesh Zadey, Priyansh Shah, Association for Socially

Author Block: Applicable Research, Pune, India, World Youth Heart Federation, Vadodara, India

Abstract Body:
Background: Hypertension (HTN) is an important modifiable risk factor for cardiovascular diseases (CVDs), a leading cause of mortality in India. However, high-resolution mortality assessments are missing. Here, we estimate HTN-attributable CVD mortality among Indian women at the district level.
Methods: We conducted a cross-sectional analysis of 704 districts for 2019. State-level number of CVD deaths due to HTN in females aged 15 and above came from Global Burden of Disease 2019. Worldpop gave district-level female population counts. National Family Health Survey 5 (2019-21) provided the district-wise percentage of women with elevated, mildly elevated, and moderately or severely high blood pressure (BP) that together gave women with HTN. To calculate the number of preventable deaths due to HTN at the district level, we assumed that the parent state's HTN-attributable CVD death rate could be applied to the districts. We estimated the number of deaths in a district by multiplying the number of hypertensive females by death rates.
Results: In 2019, 6,21,245 (95%UI:4,34,389 - 8,39,913) women died of CVD due to uncontrolled HTN in India. East Godavari district of Andhra Pradesh had the most deaths 2,78,787 (95%UI: 1,91,514 - 3,74,766) while Saiha district of Mizoram 1.71 (95%UI: 1.074 - 2.63) had least deaths. The top 10 districts lead to 2,079,284 HTN-attributable CVD deaths.
Conclusion: These novel estimates depict a large burden of preventable mortality and point to wide variation across districts. These findings call for a targeted proactive approach to secondary prevention.

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 45
Category: Prevention and Health Promotion
Title: HEALTH STATUS OUTCOMES OF ANTIANGINAL THERAPIES IN PATIENTS AFTER CORONARY REVASCULARIZATION
Author Block: Yong Zeng, Zhao Xiliang, Beijing Anzhen Hospital, Capital Medical University, Beijing, China, Beijing, People's Republic of China

Abstract Body:

Background: The impact of antianginal therapies on the health status of coronary artery disease (CAD) patients who have undergone coronary revascularization has not been well studied. This study aimed to investigate the effect of nicorandil in patients after coronary revascularization, measured by Seattle Angina Questionnaire (SAQ).

Methods: We analyzed data from 1,556 patients enrolled in the GREAT Disease Registry Study between September 2021 and May 2022. Changes in SAQ summary score (SAQ-SS) from baseline to 3, 6, 9, and 12 months were assessed. Statistical methods included a linear mixed-effects model and propensity score matching (PSM) for comparative analysis.

Results: Among the 1,038 patients analyzed (22.7% female; mean age [SD], 59.9 [10.2] years), 648 (62.4%) received nicorandil, while 390 (37.6%) did not. Linear mixed-effects model analysis revealed that nicorandil was associated with statistically significant improvements in SAQ-SS across all time points (Table 1), indicating beneficial effects in patients after revascularization. Sensitive analysis was conducted using the PSM method. After PSM adjustment, both groups comprised 321 patients each. The change in SAQ-SS at 12 months was significantly greater in the nicorandil group (19.2 ± 14.06) compared to the non-nicorandil group (14.91 ± 12.9 , $p < 0.001$).

Conclusion: These findings indicated that nicorandil is associated with improved health status outcomes in CAD patients who have undergone coronary revascularization.

Table 1 Changes in SAQ-SS across all time points

Visit	SAQ-SS changes from baseline		LS mean Difference (Nicorandil-Non-nicorandil; 95%CI)	P Value
	Nicorandil	Non-nicorandil		
3 months	16.45	13.58	3.063 (1.33, 4.79)	0.001
6 months	18.50	15.28	3.514 (1.79, 5.24)	<0.0001
9 months	17.98	15.46	2.852 (1.13, 4.58)	0.001
12 months	18.94	15.15	3.727 (2.00, 5.46)	<0.0001

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 46
Category: Prevention and Health Promotion
Title: DEVELOPMENT OF PRE AND POSTOPERATIVE REHABILITATION EDUCATION MATERIAL FOR INDIVIDUALS UNDERGOING CORONARY ARTERY BYPASS GRAFT SURGERY
Author Block: Shrikant Sahu, Nihara Hegde, Nivedita Hanakanahalli, Rijil R. Tharakan, Padmakumar Ramachandran, Guruprasad D. Rai, Abraham S. Babu, Manipal College of Health Professions, Udupi, India
Abstract Body:
Background: Patient education is an important core component of cardiac rehabilitation. However, there is a lack of systematically developed and objectively assessed education materials for patients undergoing coronary artery bypass graft surgery (CABG).
Methods: A systematic literature search was followed by thematic analysis of identified education materials. The identified themes were mapped with the recent European Society of Cardiology's guidelines for prevention of cardiovascular disease. Two separate manuals were developed, one for preoperative education, and the second for post operative rehabilitation. The manuals were assessed for their readability with the Flesch Kincaid Readability Age (FKRA) formula and optimised to achieve a score of 6 - 8 as per the recommendations of the American Thoracic Society. Ten reviewers including clinical experts and patients assessed the understandability and actionability of the materials with the Patient Education Materials Assessment Tool for Printable materials (PEMAT-P).
Results: Among the identified education materials only one had explained the development of the manual and three had evaluated their materials. Two had performed an objective assessment with two different tools while the other study had conducted a qualitative evaluation by nurses and patient representatives. Most of the education materials were from high-income countries. After thematic analysis, 9 and 15 themes were included in the preoperative and postoperative manuals respectively. FKRA scores of 6.43 and 6.47 were achieved for the preoperative and postoperative materials respectively. The understandability of the preoperative and postoperative materials was scored at 88.20+9.17 and 90.12+10.12 respectively by the reviewers on the PEMAT-P. The actionability of both materials were scored at 93.12+13.70.
Conclusion: Two education manuals, one for prehabilitation and one for postoperative cardiac rehabilitation, were developed with adequate readability, optimal understandability and actionability.

Session Title: Saturday Morning Poster Session
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 47
Category: Valvular Heart Disease

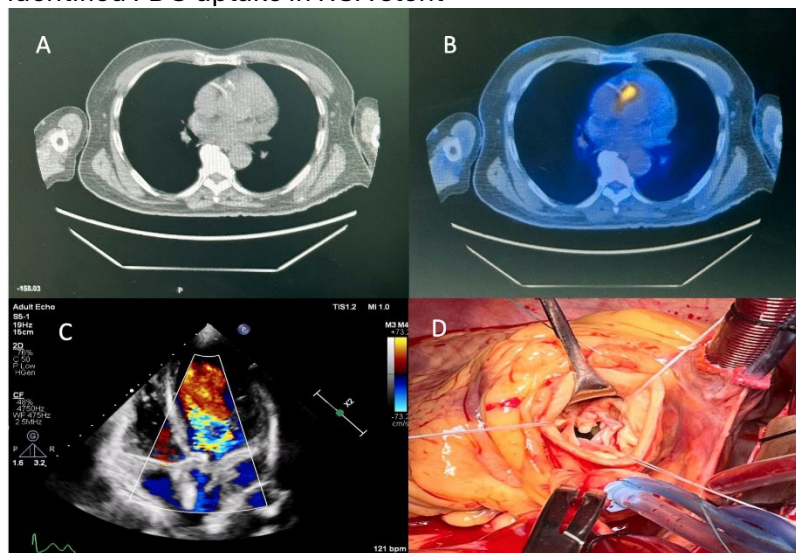
Title: “CAUGHT THE STENT AND BIT THE VALVE” - CORONARY STENT INFECTION PRESENTING WITH AORTIC VALVE INFECTIVE ENDOCARDITIS CAUSED BY MYCOBACTEROIDES ABSCESSUS

Author Block: Goutam Kintada, KRISHNA PRASAD AKKINENI, rakesh yadav, JAYA BISWAS, URVASHI B SINGH, AIIMS NEW DELHI, NEW DELHI, India

Background: A gentleman presented with fever 1 month after PCI(Percutaneous coronary intervention).He was diagnosed as coronary stent infection after evaluation.He developed aortic valve infective endocarditis(IE) requiring surgery.

Case: Our patient,a sexagenarian with prior history of PCI to right coronary artery(RCA).He underwent PCI for in-stent restenosis.1 month later developed fever.Serial blood cultures were sterile and 2DEcho was normal.PET-CT identified FDG uptake in RCA stent

Abstract Body:



.Coronary stent infection was considered, started on parenteral antibiotics.Fever settled.Patient discharged on oral antibiotics.5months later presented with heart failure.Echo showed vegetation, severe aortic regurgitation.Repeat blood cultures were sterile.Due to intractable heart failure, he underwent aortic valve replacement with bypass graft to RCA.Culture from vegetation grew Mycobacteroides abscessus.

Decision-making: PET-CT helped in picking up stent infection.Since patient responded well oral antibiotics considered.IE likely due to local infection extension.Mycobacteroides abscessus was a surprise.Retrospectively, this explains no growth in multiple blood cultures and initial improvement with bacteriostatic antibiotics like Levofloxacin.

Conclusion: This is the first case of coronary stent infection with IE caused by Mycobacteroides abscessus.When repeat cultures come sterile in IE, rare micro-organisms have to be considered.

Session Title: Saturday Morning Poster Session

Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am

Poster Board Number: 48

Category: Valvular Heart Disease

Title: A CASE OF INFECTIVE ENDOCARDITIS DUE TO STREPTOCOCCUS MITIS WITH RARE COMPLICATION

Author Block: VASUNDHARA PONNAGANTI, SRIRAM VEERARAGHAVAN, SRM MEDICAL COLLEGE AND GENERAL HOSPITAL, CHENGALPATTU, India

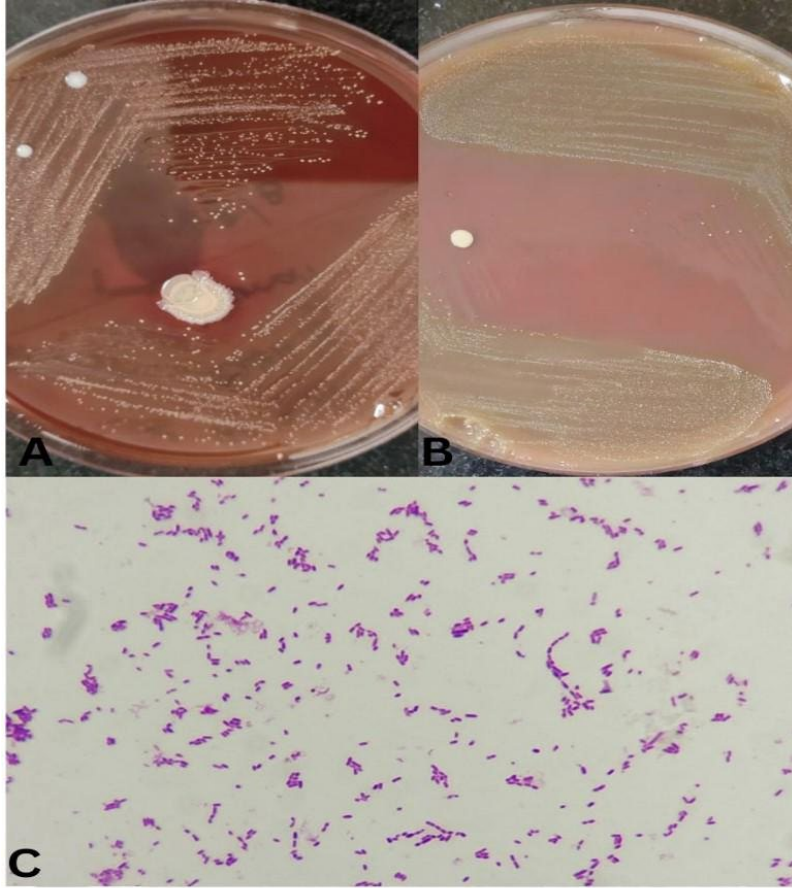
Background: STREPTOCOCCUS MITIS IS A VIRULENT SPECIES OF VIRIDANS STREPTOCOCCI THAT CAN CAUSE INFECTIVE ENDOCARDITIS. WE PRESENT A CASE OF I.E WITH CHORDAE RUPTURE.

Case: A 40YR OLD MALE PATIENT PRESENTED WITH COMPLAINTS OF FEVER, DYSPNEA NYHA II . ECHO SHOWED VEGETATION ON AML AND PML WITH MILD MITRAL REGURGITATION. BLOOD CULTURE SHOWED S.MITIS GROWTH (FIG1). ANTIBIOTICS STARTED. AFTER 8DAYS, PATIENT DEVELOPED ACUTE

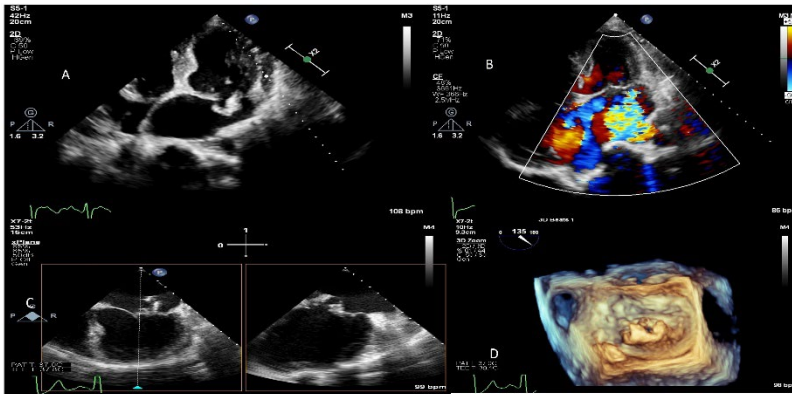
Abstract Body: PULMONARY EDEMA. REPEAT ECHO SHOWED CHORDAE RUPTURE WITH SEVERE MR (FIG 2). REFERRED FOR MITRAL VALVE SURGERY. UNFORTUNATELY PATIENT DIED ON 2ND POST OP DAY.

Decision-making: EMERGENCY SURGERY DONE ; VEGETATION WERE REMOVED AND BIOPROSTHETIC VALVE WAS PLACED.

Conclusion: THIS CASE REPRESENTS RARE COMPLICATIONS OF S.MITIS ENDOCARDITIS & SURGICAL INTERVENTION IN I.E.



A. BLOOD AGAR
 B. CHOCOLATE AGAR SHOWING ALPHA HEMOLYTIC STREPTOCOCCUS MITIS COLONIES
 C. GRAM POSITIVE STREPTOCOCCI



A TTE A4C B.TTE SEVERE MR C.TEE CHORDAE RUPTURE D.3D IMAGE OF VALVE

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 49
Category: Valvular Heart Disease
Title: LEFT ATRIAL STRAIN AS A SURROGATE PARAMETER FOR SUCCESSFUL PERCUTANEOUS BALLON MITRAL VALVOTOMY ?
Author Block: BHAGWATI PRASAD PANT, Rohit Walse, Harikrishnan Sivadasanpillai, Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST), Thiruvananthapuram, India

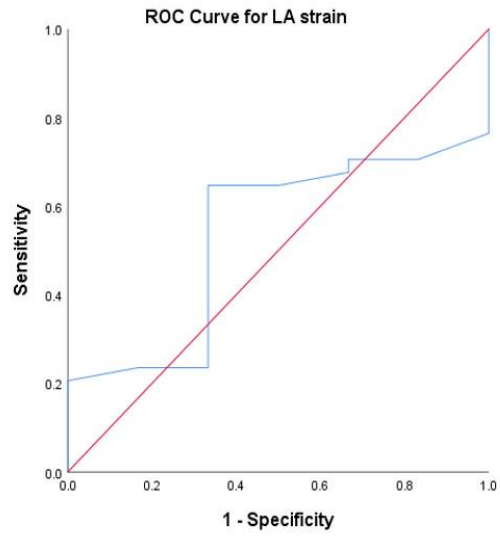
Background: Severe mitral stenosis (MS) leads to morphological and functional changes in left atrium (LA) causing dysfunction. Relieving mitral obstruction improves the LA structural remodelling. However, this is not taken as a measure of successful Ballon Mitral Valvotomy (BMV) in clinical practice.

Methods: We studied the relationship between LA strain and severe MS and the short term effect of BMV on LA mechanics in a prospective observational single centre study.

Results: Peak atrial longitudinal strain (PALS) was impaired in patients (n=40) with severe MS and improved post BMV ($11.93 \pm 3.29\%$ vs $14.96 \pm 3.59\%$ $p < 0.001$). There was a significant decrease in transmitral gradient (12.0 ± 4 mmHg vs 3.2 ± 1.6 mmHg, $p < 0.001$) and systolic pulmonary artery pressure ($p < 0.001$) after Procedure. MV area ($1.03 \pm 0.27\text{cm}^2$ vs $1.81 \pm 0.31\text{cm}^2$, $p < 0.001$) significantly increased after procedure. PALS failed to predict the success of the procedure as (AUC- 0.53 ; 95% CI, 0.32-0.75, $p = 0.791$). A cutoff value of 11.42% demonstrated a sensitivity of 64.7% and specificity of 66.7%. ($R = 0.33$; 95% CI- 0.09, 0.6, $p = 0.038$)

Conclusion: PALS shows a significant improvement following BMV . This increase values reflects an improvement in clinical status and an improvement in function class in follow up. **While PALS offers promise, it has limitations. Therefore, it seems reasonable to consider PALS as a supportive indicator alongside established markers like MV area and pressure gradient for**

assessing procedural success.



AUC- 0.53; 95% CI, 0.32-0.75, p =0.791

Session Title: **Saturday Morning Poster Session**
Session Time: Saturday, August 17, 2024, 10:50 am - 11:20 am
Poster Board Number: 50
Category: Valvular Heart Disease

Title: THE TIMING OF MITRAL VALVE REPLACEMENT IN AN ADULT PATIENT WITH DEFINITIVE INFECTIVE ENDOCARDITIS AND LARGE CEREBRAL INFARCT: A COMPLEX DECISION
Hannah Faith R. Mojica, Rejine Zaneta Divinagracia, Lea Arceli Gonzales
Author Block: Porciuncula, St. Luke's Medical Center Quezon City, QUEZON CITY, Philippines

Abstract Body:
Background: When confronted with a large ischemic cerebral infarct, clinicians must carefully assess the risk of hemorrhagic conversion against delaying cardiac surgery and exacerbating heart failure. This delicate balance is crucial for optimal patient outcomes
Case: A 38-year-old male, came in for aphasia, MRI noted bilateral territorial cerebrovascular infarction (largest lesion: 10.03 cm). 2D- Echo showed 1.1cm x 0.55cm irregular, mobile density on anterior mitral valve leaflet, causing severe regurgitation.
Decision-making: According to the latest ESC guidelines, urgent surgical timing is recommended for patients with high embolic risk, supported by Class I Level B evidence. However, the large size of the cerebral infarct introduces the possibility of hemorrhagic conversion, necessitating careful consideration. The risk of hemorrhagic transformation is directly proportional to the size of the cerebral lesion, as indicated by the scoring system developed by Muscari et al. To mitigate this risk, a maximum interval of 14 days post-infarction could be applied to patients at high risk (lesion size ≥ 5 cm) to avoid perioperative hemorrhagic conversion. Another critical factor in determining the timing of surgery is cerebral edema, which typically peaks within the first 2-5 days after an ischemic stroke onset. During this period, there is a risk of increased intracranial pressure and worsening neurological outcomes. However, after day 5, cerebral edema typically resolves. Considering the large ischemic infarct, the risk of hemorrhagic conversion, and the time required for cerebral edema to resolve, alongside the absence of heart failure symptoms and cardiogenic shock, the patient in this case was recommended to undergo mitral valve surgery 2 weeks post-infarction.
Conclusion: An individually tailored approach to surgical timing, which accounts for the risk of hemorrhagic conversion and the resolution of cerebral edema, is essential for patients with both cardiac and CNS sequelae of infective endocarditis. This management approach underscores the ongoing challenge of simultaneously preserving both brain and heart function in these complex cases.

Session Title: **Challenging Clinical Cases in Multimodality Imaging**
Session Time: Saturday, August 17, 2024, 1:50 pm - 2:40 pm
Presentation Number: 23-05
Category: Multimodality Imaging

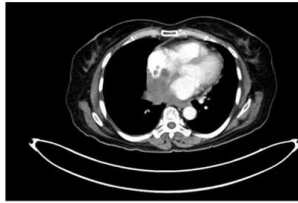
Title: TRAGIC ROADBLOCKS: OBSTRUCTIVE SHOCK CAUSED BY INTIMAL SARCOMA WITH PULMONARY VEIN STENOSIS AND OBSTRUCTION OF THE VENA CAVAE

Author Block: Ebenezer Daniel, Jesu Krupa, Anne Jennifer, Aparna Irodi, Leena Robinson Vimala, Karthik Gopinath, Jagadeesh Kumar Ch, Manisha Mane, Saumya Sara Sunny, Viji Samuel Thomson, Christian Medical College, Vellore, India

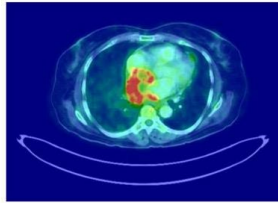
Abstract Body:
Background: Intimal Sarcomas are highly aggressive tumors arising from vascular structures and can present with obstructive features.
Case: A 63-year-old lady presented with worsening dyspnea for two weeks. The echocardiogram showed a mass in the right atrium spanning from the IVC (Inferior vena cava) - right atrial junction to the SVC (Superior vena cava) along the interatrial septum and the roof of the Left atrium. PET-CT revealed the mass to be metabolically active, encircling the right superior and inferior pulmonary veins.
Decision-making: She underwent a transjugular biopsy of the mass, which showed a malignant mesenchymal tumor infiltrating the endocardium-lined bundles of cardiomyocytes. Immunohistochemistry revealed variable positivity for MDM2, Desmin, and SMA, while CD31, ERG, CD34, D-240, Myogenin, MyoD1, and h-caldesmon were negative. This was consistent with an intimal sarcoma. She was deemed inoperable, and was initiated on palliative therapy. Subsequently, she developed acute dyspnea and hypotension. A CT pulmonary angiogram was negative for pulmonary embolism. TEE revealed narrowing of all pulmonary vein ostia with a peak flow velocity of 150 cm/s. Additionally, signs of SVC and IVC obstruction were present, with a peak flow velocity of 170 cm/s, culminating in obstructive shock. The patient succumbed to the illness shortly.
Conclusion: Intimal Sarcomas are aggressive tumors that can present with obstructive symptoms and have a poor prognosis due to their delayed presentation.



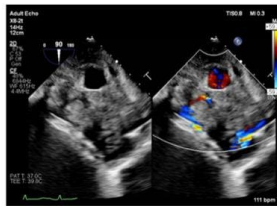
3D Reconstruction of CT depicting the malignant mass highlighted in red



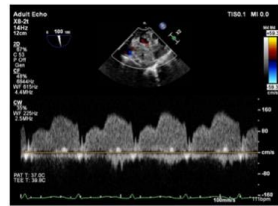
CT Showing mass infiltrating the right atrium and right atrial appendage and completely encircles the right superior and inferior pulmonary veins, causing severe narrowing of the veins



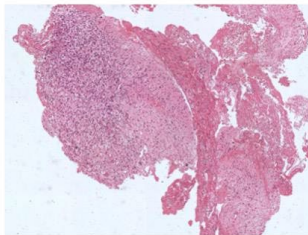
PET CT showing metabolically active irregular mildly enhancing cardiac lesion seen on the right side infiltrating right atrium and right atrial appendage



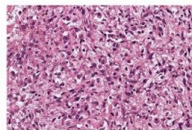
Transesophageal echocardiogram showing significant narrowing and flow turbulence in the left upper and lower pulmonary veins



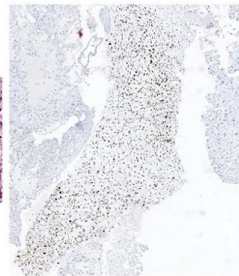
Doppler across left pulmonary vein showing increased colour flow turbulence seen peak velocity 150cm/s



Cardiac myocytes infiltrated by tumour (H&E-40X)



Spindle and epithelioid tumour cells with moderate pleomorphism and mitotic figures (H&E-200X)



Nuclear positive staining for MDM2 (H&E-100X)

Session Title: Challenging Clinical Cases in Multimodality Imaging

Session Time: Saturday, August 17, 2024, 1:50 pm - 2:40 pm

Presentation Number: 23-07

Category: Multimodality Imaging

Title: UNLOCKING THE IRON CAGE: A DIAGNOSTIC ODYSSEY THROUGH HAEMOCHROMATOSIS

Author Block: Pankaj Banotra, Aditi Singhvi, umesh Nagesh, Vimal Raj, Narayana Institute of Cardiac Sciences, Bangalore, India

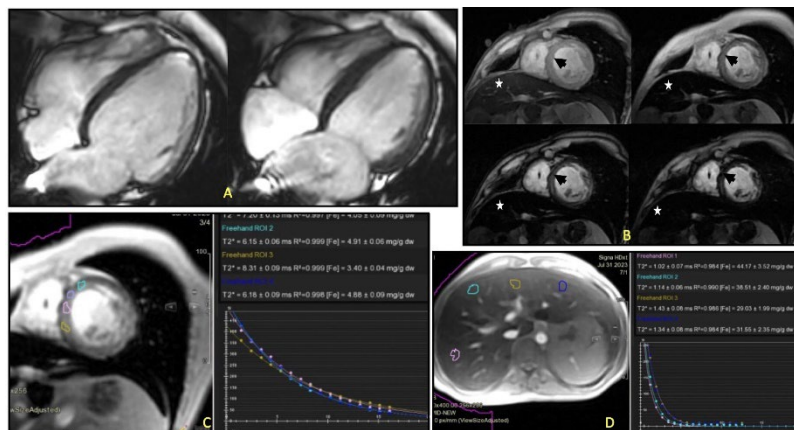
Background: Iron overload cardiomyopathy is a rare cause of heart failure (HF). It can be due to blood transfusions, ineffective erythropoiesis as in thalassemia, or hereditary haemochromatosis, which is rare in South Asia.

Case: A 30-year-old male with insulin-dependent diabetes mellitus presented with dyspnoea, oedema and skin darkening. He had severe biventricular systolic dysfunction and dilatation, anaemia, serum iron 46 mcg/dl, ferritin 3,629 IU/L, and elevated transaminases. Based on this presentation, iron overload was suspected. CMRI demonstrated reduced myocardial T1 (677ms) and hypointense liver. T2* imaging showed severely reduced T2* in heart and liver, consistent with iron loading in heart and liver. Multidisciplinary evaluation revealed panhypopituitarism and poor pancreatic function. He was treated with iron chelation therapy, guideline-directed HF therapy, hormone replacement and insulin. Cardiac function recovered after a year.

Decision-making: In this case, a thorough evaluation led to suspicion and CMRI confirmed iron overload cardiomyopathy. Multi-system involvement and lack of prior blood transfusions was suggestive of hereditary hemochromatosis. Genetic testing could not be performed due to financial constraints. Chelating agents can improve organ function, like in our patient.

Abstract Body:

Conclusion: This case highlights the importance of a detailed assessment and imaging in HF patients. Early diagnosis of iron overload is key, as treatment may be curative.



A) Four chamber view in cardiac MRI during diastole (left) and systole (right) showing poor contraction. Also note the dark signal of the myocardium in keeping with iron overload. B) Sequential T2* MRI images showing rapid decline in the signal intensity of myocardium (black arrow) and liver (white star) over time indicating iron overload. C) T2* value 6.96 ms in heart consistent with iron concentration of 4.3 mg/g. D) T2* value 1.23 ms in liver, consistent with iron concentration of 36 mg/g.

Session Title: Challenging Clinical Cases in Multimodality Imaging

Session Time: Saturday, August 17, 2024, 1:50 pm - 2:40 pm

Presentation Number: 23-09

Category: Multimodality Imaging

Title: SMALL VESSEL ISCHEMIC STROKE AND MYOCARDIAL INVOLVEMENT MIMICKING SARCOIDOSIS IN A PATIENT WITH TUBERCULOSIS

Author Block: Sunil Roy Thottuvelil Narayanan, Swathy Lakshmi, Sandeep Padmanabhan, Nayanthara Shenoy, Leenadevi K.R, Aster Medcity, Kochi, India

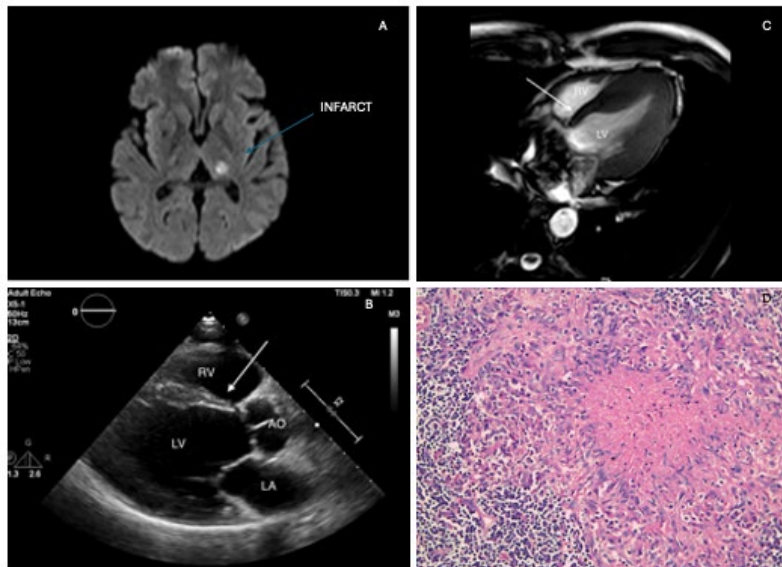
Background: Tuberculosis (TB) and sarcoidosis are chronic, multisystem, granulomatous diseases with similar manifestations in the lungs and other organs. A multidimensional diagnostic approach should be used to identify the underlying cause.

Case: A 45-year-old man presented with sudden weakness in the right lower extremity. MRI brain revealed acute infarction in the left thalamus (Fig1 A) with chronic small vessel ischemic changes in other areas. Echocardiography showed thinning of the basal septum, which was hyperechoic and akinetic (Fig 1B) and cardiac MRI revealed revealed same.(Fig 1C) Coronary angio showed minor disease.

Decision-making: Sarcoidosis was suspected and workup was performed. ACEI level was normal and no lymphadenopathy in CXR. Whole body PET-CT showed tiny FDG-eager lymph node adjacent to the left coracoid process and mediastinum. A lymph node excision biopsy was performed. Histopathological examination revealed caseating type epithelioid cell granulomas, many of which were Langhans giant cells.(Fig 1D) Acid-fast bacteria were not seen in the smear examination. However, the culture has grown Mycobacterium Tuberculosis.

Conclusion: Stroke in young patients without typical risk factors requires a thorough investigation of the underlying cause to prevent recurrence. This case report highlights the importance of considering tuberculosis as a differential diagnosis in patients with multiorgan involvement mimicking sarcoidosis.

Abstract Body:



Session Title: Interventional and Structural Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 1:50 pm - 2:40 pm

Presentation Number: 22-05

Category: Interventional and Structural

Title: DOUBLE KISSING MINI-CULOTTE STENTING IN UNPROTECTED DISTAL LEFT MAIN BIFURCATION UNDEROPTICAL COHERENCE TOMOGRAPHY GUIDANCE: IMMEDIATE AND SHORT-TERM OUTCOMES

Author Block: RUPESH Agrawal, Jamal Yusuf, Ankit Bansal, Vimal Mehta, Saibal Mukhopadhyay, G.I.P.M.E.R., new delhi, India

Background: Increased side branch ostial restenosis is the main drawback of Culotte stenting. This is due to a napkin ring or potential gap produced at the ostium of the side branch. A bench study by Toth et al. has shown that additional sequential kissing balloon dilatation before main vessel stenting can prevent this deformity. We report immediate and short-term results of Double Kissing (DK) mini-Culotte stenting with a one-year angiographic follow-up.

Methods: Forty-five patients of distal left main (LM) disease underwent DK mini-Culotte stenting at our centre between March 2020 and December 2022 under Optical Coherence Tomography (OCT) guidance.

Results: Out of 45 patients [male:35(77.77%); mean age:63.67±4.94years], chronic coronary syndrome was present in 26(57.8%) and unstable angina in rest. All lesions were Medina (1,1,1), (0,1,1), or (1,0,1) with a median Syntax score of 28 (IQR=23-29). All procedures were technically successful with no adverse clinical events (death, myocardial infarction, or stent thrombosis). Under OCT guidance, adequate minimal stent area (MSA) of $13.28 \pm 0.77 \text{ mm}^2$, $8.25 \pm 0.29 \text{ mm}^2$, and $7.54 \pm 0.45 \text{ mm}^2$ was achieved in LM, left anterior descending (LAD) and left circumflex (LCx) respectively. Adequate stent expansion of >80% was achieved in all cases. At the end of 1 year, the incidence of major adverse cardiovascular events (MACE) was 2.2%. Further, one (2.2%) patient developed restenosis of the side branch which was managed conservatively.

Conclusion: DK mini-Culotte stenting in the distal left main is better than Culotte in preventing side branch stent deformation and its sequelae of in-stent restenosis.

Session Title: **Interventional and Structural Oral Abstract Presentations**

Session Time: Saturday, August 17, 2024, 1:50 pm - 2:40 pm

Presentation Number: 22-07

Category: Interventional and Structural

Title: SAFETY AND EFFICACY OF TRANSVENOUS ONLY APPROACH IN COMPARISON TO STANDARD APPROACH FOR PATENT DUCTUS ARTERIOSUS DEVICE CLOSURE

Author Block: Uma Devi Karuru, Saurabh Kumar Gupta, Sivasubramanian Ramakrishnan, Shyam Sunder Kothari, Anita Saxena, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI, India

Background: Transcatheter closure of PDA was pioneered by Porstmann in 1967 and has since become the mainstay of management. Initially, the standard approach involved both venous and arterial vascular access. However, recent advancements have led to the exploration of a venous only approach, which offers potential advantages, especially in reducing vascular complications associated with arterial access.

Methods: Data were collected over a 7-year and 4-month period from January 2014 to April 2021. A total of 861 patients considered for PDA device closure were included in the study. Patients with unsuitable anatomy for PDA device closure were excluded. Procedural details, including patient demographics, anatomical characteristics of the PDA, device sizes, hemodynamic data, associated diseases, post-procedural complications, and vascular complications, were recorded. Statistical analysis was performed using SPSS 23 software.

Abstract Body:

Results: Out of 861 patients, 98.8% underwent successful PDA closure, with the standard approach being more prevalent (61.8%) compared to the venous only approach (38.2%). Venous only approach patients were predominantly infants and young children, while the standard approach included a wider age range. PDA size was smaller in the venous group, with corresponding smaller device sizes. Vascular complications were rare, with arterial thrombosis and local site hematoma occurring in a small percentage of cases.

Conclusion: In conclusion, the venous only approach in transcatheter closure of PDA appears to be a safe and effective alternative to the standard approach. While further research is warranted to validate these findings and explore long-term outcomes, the study provides valuable insights into the evolving landscape of PDA management.

Session Title: **Interventional and Structural Oral Abstract Presentations**

Session Time: Saturday, August 17, 2024, 1:50 pm - 2:40 pm

Presentation Number: 22-09

Category: Interventional and Structural

Title: TRANSCATHETER AORTIC VALVE IMPLANTATION IN DESCENDING THORACIC AORTA FOR SEVERE AORTIC REGURGITATION WITH HIGH SURGICAL RISK

Author Block: Pankaj Banotra, Uday B. Khanolkar, Sanjay Mehrotra, Devi Shetty, [Karthikeyan T](#), Narayana Institute of Cardiac Sciences, Bangalore, India

Background: Transcatheter aortic valve implantation (TAVI) has emerged as a less invasive alternatives for treating aortic valve stenosis. TAVI in native pure aortic regurgitation (AR) is currently an off-label indication with sparse global experience. However, the use of TAVI in the descending thoracic aorta for surgical inoperable aortic regurgitation as palliative care is a relatively novel approach.

Methods: This is an observational prospective study which included consecutive surgically inoperable patients undergoing TAVI in descending thoracic aorta as bail out strategy. Symptomatic patients with severe AR and NYHA class (III-IV) diagnosed clinically and on echocardiography were included in the study. Decision regarding implantation of TAVI in descending thoracic aorta was taken after discussion with Heart Care team. Aim of this

Abstract Body: study is to assess the feasibility, safety, and clinical outcomes of TAVI in the descending aorta for inoperable high-risk patients with severe AR.

Results: Total seven cases underwent TAVI in descending thoracic aorta position, mean age of 51 ± 5.3 years. There was 100% procedural success. There were no in-hospital deaths or 30-day mortality. On follow-up of three months, patients experienced a mean $65.4 \pm 4.2\%$ improvement in NYHA class signifying improvement in symptoms and exercise tolerance. There was also improvement in echocardiographic parameters, including mean $20.8 \pm 9.9\%$ improvement in left ventricular ejection fraction.

Conclusion: Our study confirms that TAVI in the descending thoracic aorta for severe AR can be a viable palliative treatment option for patients deemed surgically inoperable and unsuitable for an anatomical site transcatheter valve implantation.

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 1

Category: Electrophysiology

Title: 3-DIMENSIONAL ECHOCARDIOGRAPHIC ASSESSMENT OF POST PACEMAKER RIGHT VENTRICLE DYSFUNCTION

Author Block: Dinesh Kumar, BORNALI DUTTA, farhin iqbal, Guwahati medical college & hospital, Guwahati, India

Abstract Body:

Background: Several studies have shown unfavourable ventricular remodelling caused by right ventricular (RV) pacing leading to Left Ventricular dysfunction. Nevertheless, impact of Right Ventricular pacing on Right Ventricle function has not been thoroughly assessed. With this background a prospective study is done to assess occurrence of Right Ventricle function by 2D and three-dimensional (3D) echocardiography at 3 months & 6 months after pacemaker implantation

Methods: This is a prospective, descriptive, single-centre study. All patients who underwent pacemaker implantation assessed for RV function by 2D and 3D Echocardiography at baseline, 3 months & 6 months post-implantation. The change in the follow-up period is evaluated using single factor analysis of variance ANOVA with repeated measures in normally distributed data & Bonferroni post-hoc test. A p value of <0.05 is considered statistically significant.

Results: From January 2022 to December 2022, a total of 66 patients with permanent pacemaker enrolled in study. There is statistically significant change in mean PASP (mm Hg) during follow up (18.45 ± 3.45 (Baseline) vs. 22.18 ± 3.76 (3-month) vs 26.45 ± 3.97 , p value<0.05). Also, there is statistically significant change in mean RIMP during follow up (0.48 ± 0.04 (Baseline) vs. 0.50 ± 0.04 (3-month) vs 0.50 ± 0.03 (6-month) , p value<0.05). Likewise, there is statistically significant change in mean RV E/E' during follow up (4.47 ± 0.57 (Baseline) vs. 4.70 ± 0.74 (3-month) vs 4.95 ± 0.82 (6-month) , p value <0.05).In addition, there is statistically significant change in mean TR Jet Area (cm²) during follow up (1.68 ± 0.26 (Baseline) vs. 2.22 ± 0.43 (3-month) vs 2.56 ± 0.53 (6-month), p value <0.05). But there is statistically non-significant changes in mean RVEF % (3D Echo) during follow up (53.51 ± 2.75 (Baseline) vs. 53.02 ± 2.64 (3-month) vs 53.48 ± 2.34 (6-month), p value >0.05). Other echocardiographic parameters of RV function did not show any change follow-up.

Conclusion: The study documents change in RV function as early as 6 months post pacemaker implantation. The permanent pacemaker is associated with changes in RIMP, RV E/E', PASP, and TR Jet Area during 6 months after ventricular pacing.

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 2

Category: Heart Failure and Cardiomyopathies

Title: CLINICAL CHARACTERISTICS AND NATURAL HISTORY OF PATIENTS WITH CARDIAC AMYLOIDOSIS IN THAILAND: THE FIRST 20-YEAR OBSERVATIONAL REVIEW BEFORE THE AMYLOIDOSIS BLOOMING ERA

Author Block: Patchara Kochaiyapatana, Sarinya Puwanant, Pairoj Chattranukulchai, Prasit Phowthongkum, Jarkarpun Chaipromprasit, Faculty of Medicine, Burapha University, Chonburi, Thailand, King Chulalongkorn Memorial hospital, Bangkok, Thailand

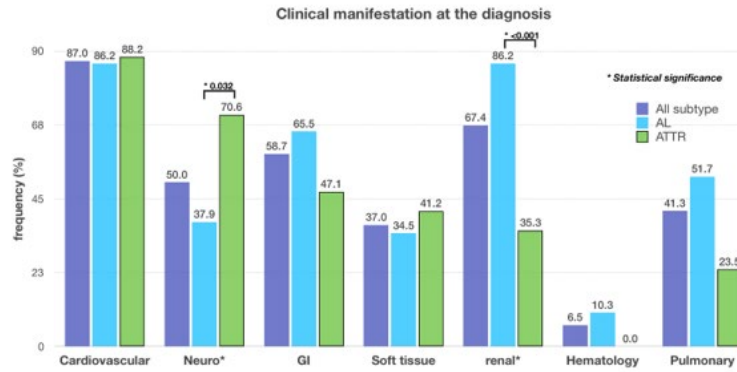
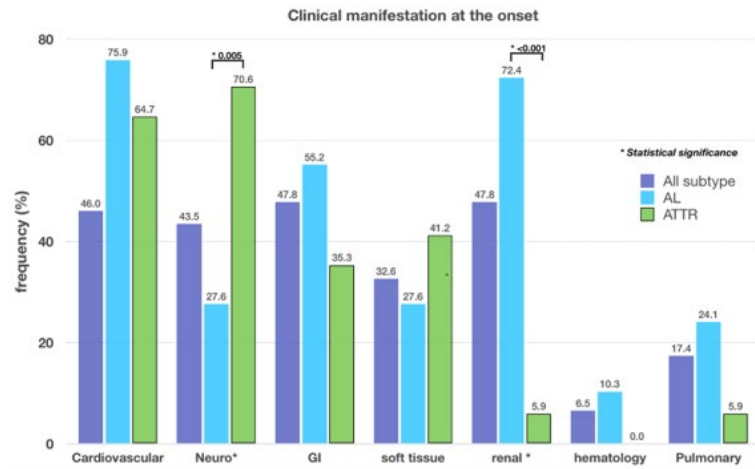
Background: Cardiac amyloidosis (CA) has become a concerning disease since the advent of target therapy and scientific statements. However, there is still a lack of data on CA in Thailand.

Methods: The first retrospective descriptive clinical characteristic reviews among adult CA patients in King Chulalongkorn Memorial Hospital, one of the large tertiary centers of Thailand. The diagnosis of CA is based on pathology and/or ^{99m}Tc -PYP scintigraphy. The clinical signs, symptoms, laboratory investigations, ECG, cardiac imagings, natural history of disease, complications, and outcomes of natural history of disease were studied.

Abstract Body: **Results:** 46 patients diagnosed with CA; 29 (63%) in AL and 17 (37%) in ATTR group. The mean age at the onset and diagnosis was 65.3 ± 11.2 and 67.2 ± 11.1 years, respectively. The median of period from the onset to diagnosis was longer in ATTR (24.4 (7.9-125.6) vs 8.1 (2.6-60.1) months, p<0.001). Neurological symptoms more common in ATTR (70.6% vs 27.6%, p=0.005) while renal/urinary symptoms in AL (72.4% vs 5.9%, p<0.001). The genetic testing in ATTR detected mutation in 6 patients (35.3%). The mortality rate was 58.7%, which higher in AL group (65.5% vs 47.1%). The median survival in the ATTR higher than AL group, (44.1 (26.7 -61.5) vs 9.3 (3.8-14.8) months, p = 0.081).

Conclusion: CA in Thailand was still underestimated and lower concerning disease. The favorable outcome based on median survival and mortality was

observed in the ATTR group.



Session Title: Saturday Afternoon Poster Session
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 5

Category: Heart Failure and Cardiomyopathies

Title: A YOUNG MALE WITH INCESSANT VENTRICULAR TACHYCARDIA

Author Block:

Sindhu Rao Malla, Debasis Acharya, Ramachandra Barik, Debasish Das, Saroj Kumar Sahoo, Subhas Pramanik, Pranjit Deb, Anindya Banerjee, Abhinav Kumar, Saran P Mohanan, Saikarthik Kowtarapu, Debasis Panda, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, Bhubaneswar, India

Background: Arrhythmogenic right ventricular dysplasia (ARVD) is a genetic disease caused by progressive fibrofatty replacement of myocardium which leads to ventricular arrhythmias and sudden death.

Case: A 28 year young male with no significant family history presented with recurrent palpitations and syncope. He had history of multiple ER and OPD visits, batteries of investigations and normal ECHO studies over the past 3 years. ECG showed irregular wide complex tachycardia of RV origin. Sinus rhythm ECG showed T wave inversions and epsilon waves in leads V1-V3. TTE showed dilated RA and RV with severe TR, RVOT diameter of 23 mm and RV fractional area change of 25.8 %. Multiple monomorphic, irregular pleomorphic and incessant VT were recorded and reverted to sinus rhythm after giving multiple antiarrhythmics including mexiletine. RV angiogram showed trabecular hypertrophy in anteroseptal area, akinetic, dyskinetic and aneurysmal segments. Cardiac MRI showed features of ARVD.

Decision-making: AICD implanted in view of high risk of sudden cardiac death with a plan to do RF ablation in case of multiple ICD shocks.

Conclusion: This case highlights the difficulty in diagnosing ARVD in early stages when it manifests with ventricular arrhythmia but with no structural changes. Although cardiac MRI is gold standard for diagnosis of ARVD, RV angiogram is simple, widely available and less time consuming than cMRI. It has good specificity and sensitivity in diagnosing ARVD and may be performed in all suspected cases.

Abstract Body:

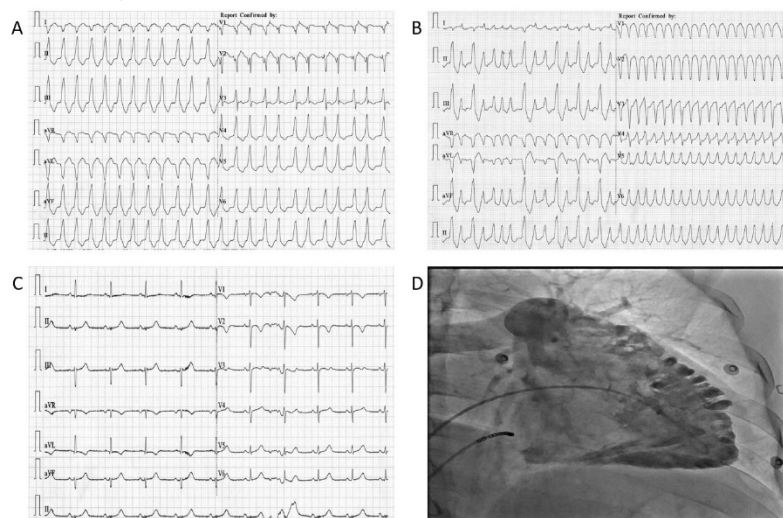


Figure 1: A) Wide complex tachycardia of LBBB morphology with cycle length alternans & VA 2:1 association; B) Irregular pleomorphic VT with 2 QRS morphologies; C) Sinus rhythm with epsilon waves and T wave inversions in V1-V3; D) RV angiogram - RAO 30° view: Trabecular hypertrophy & horizontal fissures in anteroseptal area

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 6

Category: Heart Failure and Cardiomyopathies

Title: ISOLATED COR PULMONALE FROM OBESITY HYPOVENTILATION SYNDROME MIMICKING PULMONARY EMBOLISM

Author Block: Clarence Nicole Perez, Jeannica Lerios-dela Peña, The Medical City, Metro Manila, Philippines

Background: Differentiating cor pulmonale from pulmonary embolism versus obesity hypoventilation syndrome (OHS) can be difficult but can be made with the help of various diagnostic modalities. However, in resource-limited settings, the diagnosis becomes more complicated and could impact management.

Case: A 44-year-old morbidly obese man with diabetes presented with subacute onset of shortness of breath. Family history was unremarkable. Vital signs were normal except for a cardiac rate of 138 and respiratory rate of 26. There were bibasal rales, abdominal distension, and bipedal edema. Arterial blood gas (ABG) showed respiratory acidosis. D-dimer, NTproBNP, and troponin were positive. An electrocardiogram showed sinus tachycardia. Liver function tests were normal and ultrasound showed moderate ascites. Transthoracic echocardiogram (TTE) showed normal left ventricular function. The right ventricle (RV) was dilated with adequate contractility. The interventricular septum was flattened consistent with pressure and volume overload. There was mild tricuspid regurgitation and an estimated pulmonary artery systolic pressure (PASP) of 49 mmHg. Venous duplex scan was negative.

Decision-making: CT pulmonary angiogram was considered but not pursued due to gantry weight limitations. Further investigations were limited due to financial concerns. Pulmonary embolism was clinically ruled out due to the negative duplex scan and daytime ABG. Cor pulmonale with congestive hepatopathy from OHS was diagnosed. Diuretics and paracentesis improved the condition and anticoagulation was discontinued. Outpatient polysomnography revealed severe obstructive sleep apnea. After three months of maximized diuresis and continuous positive airway pressure, a follow-up TTE showed a normal RV cavity size and PASP.

Conclusion: Symptoms of pulmonary embolism and cor pulmonale from OHS often overlap. When resources are limited, arriving at a definitive diagnosis may prove difficult. Clinicians should be vigilant with regards to their patient's available resources and meticulous in using available information to arrive at an appropriate treatment plan.

Abstract Body:

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 7
Category: Heart Failure and Cardiomyopathies
Title: PATIENT OF CARDIAC SARCOIDOSIS PRESENTED WITH REFRACTORY HEART FAILURE WITH PRESERVED EJECTION FRACTION.
Author Block: Hemeesh Tandel, Krish Patel, Jayeshkumar Meniya, Surendranagar Institute Of Medical Sciences (SIMS), Surendranagar, India
Abstract Body:
Background: Cardiac Sarcoidosis is a rare disease characterized by immunologic anomalies with unknown etiology.
Case: A 67 year old female with hypertension and type 2 DM came with complaints of Breathlessness, cough, pedal edema and generalized weakness since last 2 weeks. She had past history of hospitalization due to similar illness 3 times in last 8 months. Echocardiography reveals normal systolic function with preserved ejection fraction of 57% and grade 2 diastolic dysfunction. Restrictive Cardiomyopathy with biatrial enlargement is revealed and mild pericardial effusion present. ECG reveals Atrial Fibrillation (A Fib). Cardiac MRI reveals :- Patchy intramural and subepicardial late gadolinium enhancement visible in apical/midventricular inferior segments and mild pericardial effusion present.
Decision-making: Refractory Heart Failure (Stage D) is more common in HFrEF (Heart failure with reduced ejection fraction). This patient had normal Ejection fraction and presents with symptoms of HF. Patient is medically stabilized with GDMT (Guideline directed medical therapy). After stabilization patient had recurrent hospitalization despite GDMT due to recurrent episodes of A Fib. Radiological and Histopathological findings confirm patient having Restrictive cardiomyopathy due to Cardiac Sarcoidosis.
Conclusion: Patient of Cardiac Sarcoidosis with refractory heart failure are

more difficult to manage through GDMT.

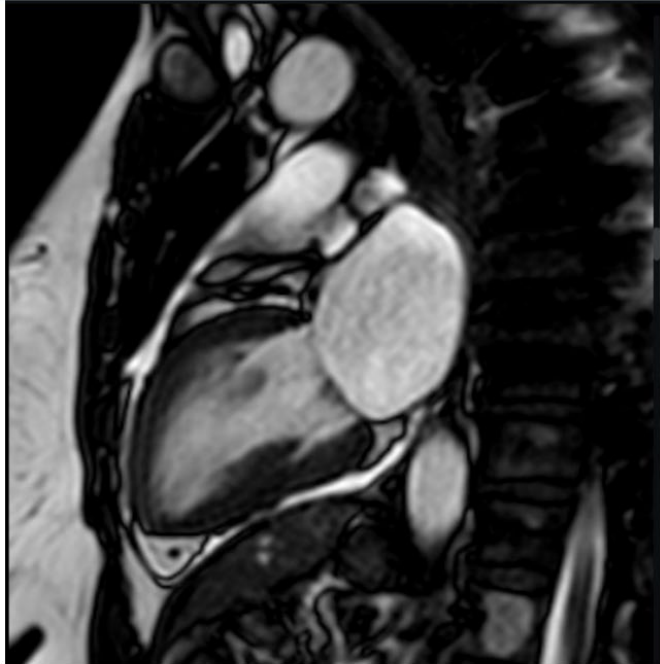


Figure 1: Patchy intramural and subepicardial late gadolinium enhancement visible in the apical/midventricular inferior segments

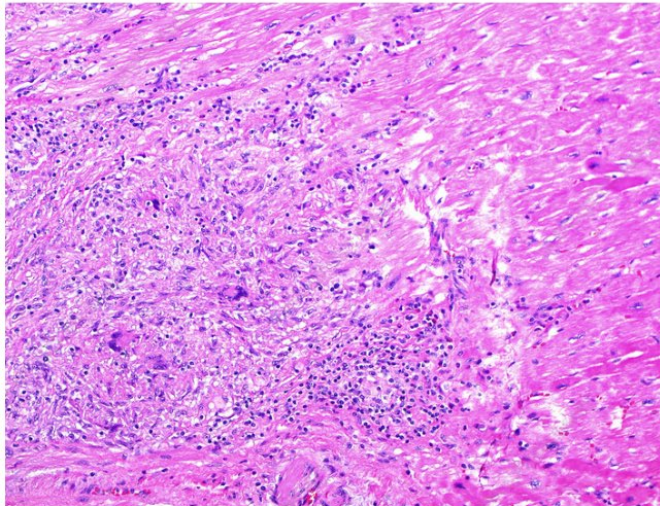


Figure 2: histopathological image of the cardiac muscle. Granuloma is present in the left side in the image.

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 9

Category: Heart Failure and Cardiomyopathies

Title: AN INTERESTING CASE OF UNDIFFERENTIATED CONNECTIVE TISSUE DISORDER WITH INFLAMMATORY CARDIOMYOPATHY

Author Block: Shaheer Ahmed, Sidhique Ahamed, Rajesh Nachiappa Ganesh, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

Abstract Body:

Background: Cardiomyopathy in the setting of connective tissue disorder is challenging to treat.

Case: A 55-year-old female presented with dyspnea and easy fatiguability for the past year. She had polyarthritis, early morning stiffness and Raynaud's phenomenon for one year. Clinical examination revealed multiple healed ulcers in the dorsal aspect of the left foot and fingers. There was sclerodactyly and pitting of the nails. ECG showed ST segment depression in leads I, aVL, V5, and V6. Echocardiography revealed global LV hypokinesia with an ejection fraction of 30% and mild RV dysfunction

Decision-making: Probable differential diagnoses at this point were idiopathic dilated cardiomyopathy, coronary artery disease, post myopericarditis sequelae, and myocardial Reynaud's phenomenon. The patient was on heart failure medications, hydroxychloroquine and prednisolone 5 mg/day. Hemogram revealed iron deficiency anemia with elevated ESR. TSH was elevated. Renal and liver function tests were normal. She had positive U1-RNP and anti-Ro/SSA antibodies and negative ANA. Nail bed capillaroscopy revealed distorted architecture of the capillaries. Fundus examination was normal. Coronary angiogram Cardiac catheterization revealed normal coronaries, elevated LV and RV end-diastolic pressures, normal cardiac index and moderate post-capillary pulmonary hypertension. Cardiac MRI showed ventricular dysfunction and normal tissue characteristics. Cold pressor myocardial perfusion imaging was normal. Cardiac PET did not reveal any increased tracer uptake. Endomyocardial biopsy revealed focal areas of myocardial necrosis and focal areas of inflammation with plasma cells. A final diagnosis of undifferentiated connective tissue disorder was made. She was started on Tab. Azathioprine 50 mg OD. On a six-month follow-up, LV ejection fraction improved to 50%.

Conclusion: This case highlights the need for an exhaustive evaluation of patients presenting with dilated cardiomyopathy, especially in younger patients. Endomyocardial biopsy might help in arriving at an appropriate diagnosis and optimal when non-invasive imaging remains inconclusive.

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 10

Category: Heart Failure and Cardiomyopathies

Title: GIANT POSTERIOR WALL PSEUDO ANEURYSM IN NON-SIGNIFICANT CORONARY ARTERY DISEASE

Author Block: Dhanesh KUMAR, Naresh Trehan, Vijay Kohli, Sanjeev Singla, Yatin Mehta, MEDANTA-THE MEDICITY, GURUGRAM, India

Background: Acute myocardial infarction (MI) is the leading cause of death with a prevalence approaching 3 million people worldwide. Left ventricular (LV) aneurysm is present in 30% to 35% of acute transmural MI. The two major risk factors for developing LV aneurysm include total occlusion of the left anterior descending artery (LAD) and failure to achieve patency of the infarct site artery. The inferior and anterior myocardial infarctions occur with almost equal frequency. It explains 85% of a true LV aneurysm's location at the apical and anteroseptal walls. The incidence of an inferior-posterior or lateral (PL) wall aneurysm is very low, about 5%-10%.

Case: Our case is 48/M and presented with complaints of dyspnea (NYHA-III), occasional chest pain for 1 week, on examination 'to and fro' murmur was present. 2D-ECHO showed a submitral large PL wall pseudo aneurysm of size 5x7cm, akinetic PL wall with LVEF of 40%, and good right ventricular (RV) function. Coronary angiography showed borderline lesions in submillimeter LAD (40%) and OM1 (40-50%). It was quite unusual and was not explaining the reason for it. The patient underwent repair of an aneurysm on CPB.

Abstract Body:

Intraoperatively there was dense adhesion on the PL surface, inside the aneurysm lots of clots and putty material were present, its neck was 3cm wide and was sparing the mitral valve apparatus, coronaries. There was acute rupture of the infarcted area of LV but due to pericardial and epicardium adhesion, it didn't prove fatal (false aneurysm). It was repaired with 3-0 prolene using a composite patch of pericardium and Dacron.

Decision-making: The risk factors for the development of pseudo-aneurysm after MI includes advanced age, female gender, hypertension, first transmural MI, lack of collateral circulation & connective tissue disorders. The most common location of LV pseudo aneurysm is posterolateral, in contrast to a true aneurysm, which is mostly located in the apicoanterior wall.

Conclusion: Posterior wall pseudo aneurysm can occur despite significant coronary artery disease because of a silent thrombus which dissolved after causing infarction. Evaluation for genetic connective tissue disorder may be needed for further evaluation.

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 11

Category: Heart Failure and Cardiomyopathies

Title: BEATING DENGUE: EXTRACORPOREAL MEMBRANE OXYGENATION AS A LIFELINE IN MYOCARDITIS RESCUE.

Author Block: Pankaj Banotra, Aditi Singhvi, Atrayee Mandal, Sunitha Abraham, Sanjay O P, Julius Punnen, Narayana Institute of Cardiac Sciences, Bangalore, India

Abstract Body:

Background: Dengue fever is a significant public health concern in tropical regions and Myocarditis in dengue infection is rare but associated with high mortality rates. Management involves supportive care and addressing hemodynamic instability. Veno-arterial extra corporeal membrane oxygenation (VA-ECMO) has emerged as viable treatment for refractory cardiogenic shock.

Case: A 19 -year-old previous healthy female presented with 1 week history of fever, myalgia, dyspnea. She was tachycardic, tachypneic and hypotensive. ECG showed complete heart block. Investigations showed positive dengue NS1 antigen, elevated troponin I (167ng/ml) and NT-proBNP (1950 pg/ml). Echocardiography demonstrated severe biventricular dysfunction. She was started on inotropic and pressor support and temporary pacemaker was inserted. Despite aggressive fluid resuscitation and high dose pressors, she remained hemodynamically unstable and developed oliguria and liver injury. Central VA-ECMO with a left ventricular vent was initiated. Endomyocardial biopsy revealed myocardial necrosis with mucolytic infiltration. Patient was managed with steroids, blood transfusions and haemodialysis. Patient showed marked clinical improvement and after 10 days ECMO was successfully weaned off. She had complete myocardial and renal recovery and was discharged after 30 days of hospitalisation on goal directed medical therapy. On 1 year follow up, cardiac function remained normal with normal NT-proBNP and cardiac magnetic resonance imaging showed no oedema or fibrosis.

Decision-making: Dengue-associated myocarditis is a potentially fatal complication. In our patient, timely initiation of ECMO with a vent provided circulatory support allowing the heart and other organs to recover through the critical phase of dengue infection.

Conclusion: This case highlights the successful use of ECMO in managing severe dengue-associated myocarditis, emphasizing the importance of early recognition and intervention in critically ill patients with this rare complication.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 12
Category: Heart Failure and Cardiomyopathies
Title: FROM NEUROLOGY TO CARDIOLOGY - A CARDIAC AMYLOIDOSIS CASE REPORT
Author Block: Arvind Kumar, Keshava R, Fortis Hospital, Bengaluru, India

Background: Cardiac amyloidosis results from amyloid protein buildup in the heart's extracellular matrix. Diagnosis has been challenging due to vague symptoms and the need for biopsies, but advanced imaging now allows earlier, non-invasive diagnosis.

Case: A 37-year-old male presented to neurology department with both hand numbness and weakness for eight months. He was diagnosed with bilateral carpal tunnel syndrome after nerve conduction study. He also had breathlessness for four months, escalating from NYHA class II to III, prompting a cardiology referral. His blood pressure was 100/54 mmHg, pulse 80 bpm, and jugular venous pressure was raised. Mild pitting edema was observed in both lower limbs. The clinical diagnosis was congestive heart failure.

Decision-making: Routine blood tests were normal, but cardiac troponin T (43.7 pg/ml) and NT-pro-BNP (1888 pg/ml) were elevated. An ECG showed low voltage complexes. 2D-Echocardiography revealed concentric left ventricular hypertrophy with a speckled appearance, and an ejection fraction of 45%. The global longitudinal strain of -8% with apical sparing suggested amyloidosis. Hematology tests showed elevated Kappa light chains and a bone marrow biopsy indicated plasma cell dyscrasia with 32% plasma cells. Cardiac MRI demonstrated diffuse late gadolinium enhancement in both ventricles. A SPECT-CT scan with 99m-technetium pyrophosphate showed focal uptake in the myocardium with a heart-to-contralateral lung ratio greater than 1.5, indicating TTR amyloidosis, but the plasma cell dyscrasia supported AL amyloidosis as the final diagnosis. He was treated with loop diuretics and chemotherapy for AL amyloidosis. A few weeks later, he had a resuscitated cardiac arrest and an implantable cardiac defibrillator was implanted. Repeat serum protein electrophoresis after chemotherapy showed normalization of the Kappa-Lambda ratio. He is now asymptomatic.

Conclusion: This case highlights the need to suspect amyloidosis in patients with non-cardiac symptoms, such as proteinuria, carpal tunnel syndrome, small fiber neuropathy, and autonomic dysfunction. Detailed imaging is crucial for an accurate diagnosis.

Abstract Body:

Session Title: Saturday Afternoon Poster Session
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 13

Category: Heart Failure and Cardiomyopathies

Title: INTRAVENOUS IMMUNOGLOBULIN FOR HEART FAILURE DUE TO MULTIPLE ETIOLOGIES: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Author Block: Meghna Joseph, Tanesh Ayyalu, Mrinal Murali Krishna, Ronaldo Correa Fabiano, Raisa Lomanto Silva, Abhigyan Majumdar, Medical College Thiruvananthapuram, Thiruvananthapuram, India, Lenox Hill Hospital, New York, NY, USA

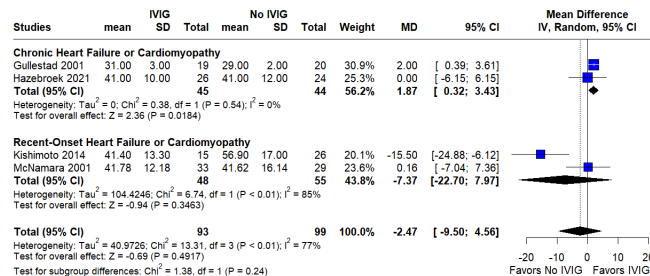
Background: Intravenous immunoglobulin (IVIG) downregulates inflammatory mechanisms associated with heart failure. We aim to investigate the effect of IVIG on left ventricular ejection fraction (LVEF) in heart failure due to multiple etiologies.

Methods: We systematically searched PubMed, Embase, and Cochrane Central databases for randomized controlled trials (RCTs) comparing treatment with and without IVIG for heart failure due to multiple etiologies. The outcome of interest was LVEF after treatment. Statistical analysis was performed using R software. The study was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guideline.

Results: The systematic review identified 4 RCTs including 192 patients. IVIG was administered in 93 (48.43%) patients. There was no difference in LVEF after treatment with IVIG (MD -2.47; 95%CI -9.50 to 4.56; p=0.49) between the groups. However, a subgroup analysis of patients with chronic heart failure or cardiomyopathy showed significant improvement in LVEF (MD 1.87; 95%CI 0.32 to 3.43; p=0.01) in the group with IVIG treatment. Subgroup analysis of patients with recent-onset heart failure or cardiomyopathy showed no difference in LVEF (MD -7.37; 95%CI -22.70 to 7.97; p=0.34) between the groups.

Abstract Body:

Conclusion: Though there was no significant effect on LVEF with IVIG treatment in patients with heart failure due to multiple etiologies, IVIG treatment in patients with chronic heart failure or cardiomyopathy improves LVEF.



Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 14

Category: Heart Failure and Cardiomyopathies

Title: ROLE OF VITAMIN D IN DIFFICULT TO TREAT CARDIO-RENAL SYNDROME IN COVID 19 PATIENTS WITH HEART FAILURE.

Author Block: Naresh Sen, NARESH N. SEN, Sonal Tanwar, Pushpanjali Hospital, Rewari, India

Abstract Body:

Background: Decreased glomerular filtration rate(GFR) is a potent predictor of cardiovascular mortality and complications. Worsening heart failure can accelerate worsening of renal function - the so-called cardiorenal syndrome. Apart from risk factors (hypertension, diabetes, elderly age, and prior history of heart or renal failure) SARS CoV2 virus-related myocarditis and multi system inflammatory process is an etiology for the same during COVID-19 era. Aims: To study the correlation between serum vitamin D values in cardio-renal syndrome and to evidential improvement in control of cardio-renal syndrome after vitamin D supplementation and correlate it with heart & renal function in COVID-19 patients who have no prior cardiac and renal disease.

Methods: Serum vitamin D levels were assessed in 188 COVID-19 patients of cardio-renal syndrome for a duration of 2 years (2020-2021) and we found low levels of vitamin D (average level was 22 U ng/ml) in 112 patients of difficult-to-treat cardio-renal syndrome between 20 -75 years of age who were uncontrolled even after courses of Beta blocker, Diuretics and ACE inhibitors or Angiotensin II Receptor Blocker Nephilysin Inhibitor (ARNI) and other optimized medical therapy. These patients were treated with calcium and Vitamin D supplementation for 12 weeks and after were re-evaluated with repeat vitamin D levels, Renal function test, GFR, and Cardiac functions by 2D Echocardiography.

Results: All 112 patients showed significant improvements in B-type natriuretic peptide (BNP level), Right and Left ventricular function, LVEF increased (13+/-5%) , decreased pulmonary capillary wedge pressure and improved class of dyspnoea New York Heart Association IV to class II or III. After 3 months of vitamin D supplementation 44% patients had improved GFR and serum creatinine value as compared to placebo 17% , p value(<0.004).

Conclusion: Study showed a strong correlation between vitamin D deficiency and difficult to manage cardio-renal syndrome and good cardio-renal outcome after supplementation.

Session Title: Saturday Afternoon Poster Session

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 15

Category: Heart Failure and Cardiomyopathies

Title: TAMING THE TURBULENT : CHALLENGING CLOSURE OF A LARGE RSOV

Author Block: BHAGWATI PRASAD PANT, Avinash Anantharaj, JIPMER, Pondicherry, India

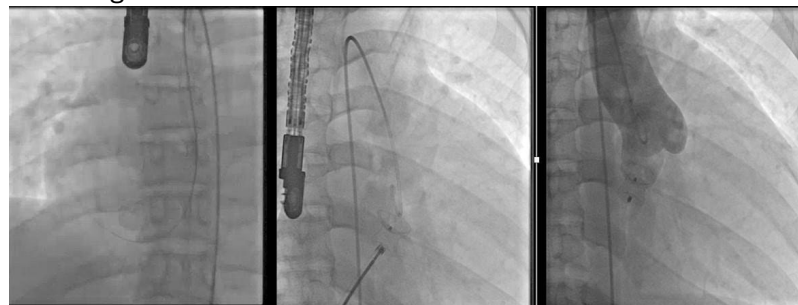
Background: Surgical management is considered to be default strategy of treatment for large ruptured sinus of Valsalva defect. 70% of patients with RSOV are potentially eligible for Transcatheter closure. However this has been challenged in recent times.

Case: 24 years old male hardworking labour presented with chest pain, progressive heart failure and class IV symptoms. Persistent failure not responding to medical management. Echocardiography (TTE) showed dilatation and rupture of the noncoronary sinus of Valsalva into the right atrium, dilation of all 4 chambers with mild LV dysfunction. Neck of the windssock was measuring 14mm so 16/18mm device was chosen.

Decision-making: The patient's poor general condition and acute decompensated heart failure necessitated a transcatheter approach for RSOV closure, offering a less invasive alternative to surgery. A- V loop was formed using 0.035 hydrophilic glidewire. RSOV was crossed using 10F Cook sheath RSOV was closed using PDA Lifetech occlude device 18/16mm. 6 month follow up LV function has improved and patient is functional class-I.

Conclusion: Minimally invasive alternative to surgery in meticulously selected cases. Long-term follow-up in appears promising. TCC is safe, effective and can be performed for bigger defect (> 10 mm). PDA device Occluder (ADO I) is an economical modality of treatment. TEE is best for pre-op evaluation, intra op helps in assess severity of AR and residual shunt. It's the time to randomize with surgical closure

Abstract Body:



Crossing with 0.035 ' Terumo glidewire

Lifetech PDA occluder (HeartR) 18/16 Device

Final position

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 16
Category: Heart Failure and Cardiomyopathies
Title: A RARE CASE OF SHEEHAN SYNDROME WITH CARDIAC TAMPONADE PHYSIOLOGY
Author Block: Niragh Sikdar, Rohan Raj, Sree Abhilekha Purohit, Medical College & Hospital Kolkata, Kolkata, India

Background: 35-year female,gravida 3,2-0-1-2,presented with altered mentation and loss of appetite for 10 days with history of severe iron deficiency anaemia requiring hospitalization 3 years prior and a complicated pregnancy loss at term 6 years ago.

Case: The patient had fever,irregular menses,shortness of breath,dizziness,weakness and pain in the extremities.Examination showed emaciation,facial odema,alopecia,bilateral lower extremity edema,and hoarse voice.Vitals showed low Blood pressure and raised Jugular Venous Pressure.Labs indicated anemia,lymphopenia thrombocytopenia,microcytic hypochromic indices,and high RDW and RDW-SD values along with low sodium,potassium and calcium levels,raised total bilirubin and alkaline phosphatase.Chest X-ray showed bilateral enlargement of cardiac silhouette and echocardiogram revealed pericardial effusion with physiology of tamponade(anterior 1.3cm, lateral 3.1cm and posterior 2.3cm,normal valve and chamber size,Left ventricular ejection fraction,55%),which necessitated pericardiocentesis.Pericardial fluid analysis negative for malignancy, infection and autoimmune disorders.

Decision-making: After ruling out infection,trauma and inflammation,patient's clinical picture pointed to hypothyroidism which was confirmed by thyroid function tests.After initial care,patient responded to hypothyroidism treatment.Given her thyroid levels,menstrual cycle irregularity as well as the nature of previous pregnancy,Sheehan's syndrome was suspected.Further investigation with MRI and hormone level testing for ACTH and prolactin revealed thinning of the pituitary gland with intact stalk and partially empty sella turcica and subnormal anterior pituitary hormone levels,leading to the diagnosis of Sheehan's syndrome.The patient was started on tailored drug regimen.

Conclusion: This case tells us that detailed diagnosis including endocrine disorders is crucial when treating women with a history of complicated pregnancies.Laboratory,imaging and detailed medical history were crucial in the diagnosis and treatment processes.The follow-up and prognosis were good with only irregular menses remaining.

Abstract Body:

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 17

Category: Heart Failure and Cardiomyopathies

Title: MISSED CASE OF SHEEHAN SYNDROME PRESENTING AS DILATED CARDIOMYOPATHY

Author Block: KRITI SONI, DINESH CHOUDHARY, SARDAR PATEL MEDICAL COLLEGE, BIKANER, India

Background: The patient presented with signs of cardiac failure and severe left ventricular systolic dysfunction. She experienced amenorrhea, lactation failure, absence of axillary & pubic hair following childbirth 10 years ago.

Case: 43 yr old non diabetic female with history of childbirth 10 yrs prior, presented with progressive breathlessness, effort intolerance and dependent edema over the last year. She had lethargy, pallor, sparse body hair, atrophied breasts, husky monotonous voice, dyspnea and leg edema. Her HR was 76/min, BP 100/70 mmHg, apex beat diffuse, shifted down and outwards, and S3. Further enquiry revealed complicated, vaginal delivery with PPH.

Her Hb was 10.5 g/dl with normal electrolytes, RFT & LFT. Echo showed dilated cardiac chambers with severe global left vent hypokinesia, severely impaired LV ejection fraction (28.7%), grade III mitral regurgitation (MR) & septal to posterior wall delay. Based on above history & examination with vital clues of amenorrhea and lactation failure after her last childbirth, she was provisionally diagnosed with Sheehan syndrome. Brain MRI revealed enlarged pituitary fosse filled with CSF. Pituitary gland was thinned and compressed.

Decision-making: Sheehan syndrome presenting with cardiac failure and its reversibility with hormone replacement is one of the rarest manifestations. Diagnosis was initially missed because of inadequate attention to typical history of complicated childbirth, failure of lactation & amenorrhea. Hence she was devoid of hormone replacement. It could be the reason for development and persistence of dilated cardiomyopathy. After confirming deficient level of thyroid and cortisol hormone (morning cortisol level-3.11mcg/dl, normal range 6.2-19.4mcg/dl) replacement therapy was started which improved her symptoms and cardiac function (MR became mild from moderate and EF improved to 43% from 28.7%).

Conclusion: Diagnosing Sheehan syndrome in immediate postpartum period is very crucial. Physicians should have high clinical suspicion in patients with PPH or unexplained hypotension-hypopituitarism due to acute pituitary necrosis. Persistent amenorrhea and failure of lactation may be important clues.

Abstract Body:

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 18

Category: Interventional and Structural

Title: MAY-THURNER SYNDROME TREATED WITH THROMBECTOMY, CATHETER-DIRECTED THROMBOLYSIS FOLLOWED BY INTRAVASCULAR ULTRASOUND (IVUS)-GUIDED VENOPLASTY, AND STENTING

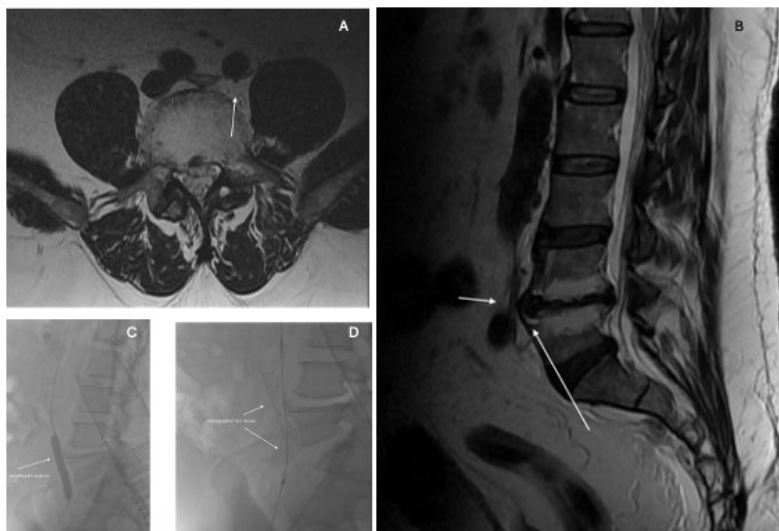
Author Block: Sunil Roy Thottuvelil Narayanan, Rohit P V Nair, Delwin George, Arjun Sadananda, Brijesh Ray, Aster Medcity, Kochi, India

Background: May-Thurner syndrome (MTS), also known as iliac vein compression syndrome is characterized by compression of the left common iliac vein between the overlying right common iliac artery and underlying lumbar vertebra. MTS can lead to significant clinical consequences.

Case: A 60-year-old male patient presented with left lower limb pain and swelling for the last three days. He gives history of sudden severe back pain following weight-lifting. Magnetic resonance imaging (MRI) of the spine revealed a lumbar disc prolapse and he was advised analgesics and bed rest. On physical examination, his left leg was swollen, starting from the calf down to the foot. The swelling was tender, and Hofman and Louven's signs were positive. The D-dimer was markedly elevated.

Decision-making: A clinical diagnosis of acute left lower limb deep vein thrombosis (DVT) was made. A duplex ultrasound scan of the lower limb showed DVT starting from the left common iliac vein (CIV). CT venogram revealed DVT of the left CIV with poor outflow to the IVC. Patient was treated by thrombectomy with catheter-directed thrombolysis followed by IVUS guided venoplasty and stenting to left common iliac vein.

Abstract Body: **Conclusion:** MTS is a relatively uncommon condition characterized by the compression of the left CIV by the right common iliac artery. Various treatment options are available for MTS including anticoagulation therapy, mechanical thrombectomy, catheter directed thrombolysis, venoplasty, stenting and surgical bypass.



Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 20
Category: Interventional and Structural
Title: PERCUTANEOUS BALLOON ASSISTED RELEASE OF STUCK METALLIC MITRAL VALVE PROSTHESIS LEAFLETS
Author Block: PANKTEE SHAH, Akshay Bafna, Akanksha Naik, Ajit Hange, Hardik More, Rajarshee Chattrapati Shahu Maharaj Government Medical College, Kolhapur, India
Background: Valve clinics have markedly educated patients on mechanical valve maintenance. Stuck mechanical valve leaflets at the mitral position continue to pose significant clinical challenges.
Case: 60-year-old female with a history of severe mitral stenosis (MS), severe mitral regurgitation (MR), and mild aortic regurgitation (AR) who underwent mitral valve replacement (MVR) in 2008 and a redo MVR in 2022 with a 25 SJ mechanical valve, presented with a stuck valve due to noncompliance with anticoagulation therapy. TTE and fluoroscopy confirmed no leaflet movement and an increased mean gradient from baseline.
Abstract Body: **Decision-making:** Despite unsuccessful initial thrombolysis with left-atrial pressures at 46/32 mmHg pre-thrombolysis and 40/24 mmHg post-thrombolysis due to non-responsiveness, percutaneous intervention was pursued. Under local anesthesia, femoral access, septal puncture, and balloon dilation to release the valve leaflet. Post-procedure, pressures dropped to 10/6 mmHg, indicating successful intervention.
Conclusion: Percutaneous intervention provides a viable alternative to redo surgical replacement for stuck mechanical valve leaflets, showing its efficacy in resolving valve immobility due to patient non-adherence to anticoagulation. This underscores the importance of strict medication compliance for

mechanical valve patients.



Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 21
Category: Interventional and Structural
Title: A CASE REPORT ON DOUBLE VALVULOPLASTY DONE IN A YOUNG PATIENT WITH CHRONIC RHEUMATIC HEART DISEASE
Author Block: Ananya Buddharaju, Vennela Sai Tiruveedhi, Dr Sadanand Reddy Tummala, ESIC medical college and hospital, Hyderabad, India
Background: Chronic Rheumatic Heart Disease (CRHD) contributes to significant mortality and morbidity in India. The disease effects the valvular endocardium, preferentially involving the mitral valve, in association with aortic or tricuspid valve.
Case: A 28 year old male presented to the OPD with complaints of dyspnea for 6 months (NYHA III) and orthopnea for one month. The patient is a known case of CRHD. Auscultatory findings showed ejection systolic murmur and prolonged mid diastolic murmur. Echocardiography revealed severe aortic and mitral valve stenosis. The patient's aortic annulus was only 19mm. The patient had normal sinus rhythm. The patient was planned for Percutaneous Balloon Mitral Valvuloplasty (PBMV) and Percutaneous Balloon Aortic Valvuloplasty (PBAV) in a single sitting. The procedure was performed via a femoral approach. The aortic valve was dilated 14mmX40mm using ATLAS GOLD balloon catheter resulting in a fall of trans aortic valve mean pressure gradient from 83.5mm of Hg to 26.7mm of Hg. The mitral valve was dilated 26mm using Inoue balloon catheter resulting in a fall of trans mitral valve mean pressure gradient from 28.7mm of Hg to 3.2mm of Hg. The procedure was uneventful. Post procedure echocardiography showed mild aortic stenosis, no mitral stenosis and no regurgitation. The patient's dyspnea improved to NYHA I.
Decision-making: The case was discussed by the Heart team and the option of surgical aortic and mitral valve replacement was rejected due to the patient's young age and a small aortic annulus. PBMV and PBAV were the preferred procedures in order to eliminate the lifelong use of anticoagulants in the patient who is a construction worker with high risk of acquiring workplace injuries. PBMV and PBAV were highly efficacious in this particular patient due to his young age and absence of significant leaflet or annulus calcification. Follow up after 7 months showed no significant change in pressure gradients and the patient showed remarkable improvement in symptoms. The patient continued to be in sinus rhythm.
Conclusion: This report shows that PBMV and PBAV together could be explored as a feasible option for patients having severe mitral and aortic stenosis with suitable anatomy.

Abstract Body:

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 22
Category: Interventional and Structural
Title: COMBINED DILATION OF RHEUMATIC MITRAL AND TRICUSPID STENOSIS IN YOUNGEST PATIENT WITH QUADRIVALVULAR DISEASE
Author Block: Amanpreet Singh Wasir, Prashant BHARADWAJ, Ravi Kalra, Hemali Passwala, Siddhi Surve, Bharati Vidyapeeth University Medical College, Pune, India
Background: Rheumatic heart disease with involvement of all the four valves is extremely rare with anecdotal case reports. Severe symptomatic multivalvular involvement is also rare.
Case: 12-year-old boy presented with gradually progressive dyspnea over two years to current New York Heart Association (NYHA) class IV status. He was hospitalized for a week with fever, sore throat and migratory polyarthralgia three years ago. Examination- pallor, facial and pedal edema, malnutrition (height= 127 cm, weight= 27 kg, body-mass index= 16.8 kg/m²), Harrison's sulcus, pulse= 90/minute, blood pressure= 104/64 mm of Hg, severe mitral and tricuspid stenosis, severe pulmonary arterial hypertension, and right ventricular failure. Electrocardiogram- sinus rhythm with right axis deviation and QRS morphology consistent with systemic pulmonary hypertension and severe mitral stenosis. X-Ray chest- bi-atrial enlargement with pulmonary arterial and venous hypertension. Echocardiography- severe mitral stenosis (mitral valve area= 0.3 cm²), trivial mitral regurgitation, Wilkins Score= 8/16, mean gradient= 16 mm of Hg (maximum= 40 mm of Hg), doming of the thickened tricuspid valve with severe tricuspid stenosis, thickened aortic valve leaflets with mild aortic stenosis and trivial aortic regurgitation, and doming of thickened pulmonary valve with a c notch and trivial pulmonary regurgitation. There was associated severe pulmonary hypertension (suprasystemic) with right ventricular systolic pressure of 140 mm of Hg.
Decision-making: In view of young age, malnutrition and a fulminant presentation of severe mitral and tricuspid stenosis, the management hinged around the percutaneous versus the surgical options. Key factors included young age, financial constraints, and repeated reluctance of parents for open heart surgery. The patient underwent a percutaneous dilation of mitral and tricuspid stenosis with an Inoue balloon in a single intervention.
Conclusion: We describe quadrivalvular rheumatic heart disease with severe symptomatic mitral and tricuspid stenosis in the youngest ever reported case. The combined balloon dilation of both valves at this age is also not reported.

Abstract Body:

Session Title: Saturday Afternoon Poster Session
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 23

Category: Interventional and Structural

Title: SURVIVING THE SECOND CHANCE: EXPLORING EARLY MORTALITY IN VALVE-IN-VALVE TRANSCATHETER AORTIC VALVE REPLACEMENT

Author Block: Yong Hao Yeo, Kieran Lee, Ghee Kheng Lim, Xuan Ci Mee, Min Choon Tan, Qi Xuan Ang, Kwan S. Lee, Corewell Health William Beaumont University Hospital, Royal Oak, MI, USA, Mayo Clinic, Scottsdale, AZ, USA

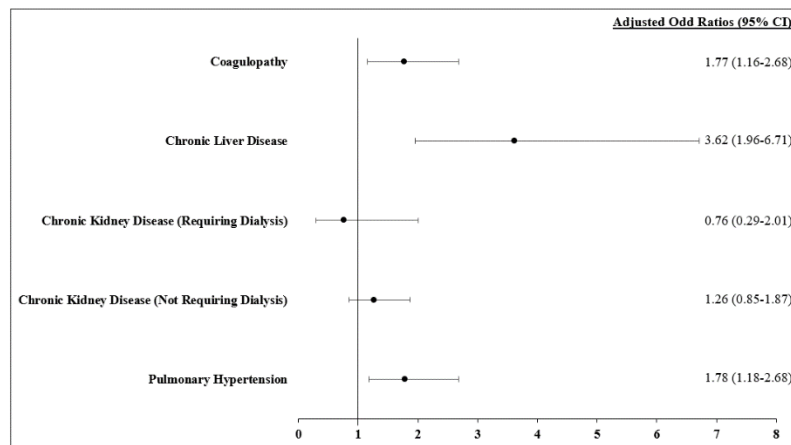
Background: Valve-in-valve transcatheter aortic valve replacement (ViV TAVR) is increasingly used after bioprosthetic valve failure, but data on the risk stratification for predicting early mortality after this procedure are scarce.

Methods: Using the Nationwide Readmissions Database, we included patients ≥ 18 with ViV TAVR (2017-2020). We categorized them into two groups based on the presence of early mortality (death within 30 days after the procedure). We identified the trend of early mortality and further analyzed the predictors of early mortality.

Results: 6,270 patients who had ViV TAVR were included. After adjustment, 329 (3.0%) had early mortality and 10,680 (97.0%) without. There was a decreasing trend in early mortality from 3.3% in 2017 to 1.0% in 2020, but it was insignificant ($p=0.71$). In multivariable analysis, the independent factors associated with early mortality were chronic liver disease (aOR: 3.62; 95%CI: 1.96-6.71, $p<0.01$), coagulation disorder (aOR: 1.77; CI: 1.16-2.68, $p<0.01$) and pulmonary hypertension (aOR: 1.78; CI: 1.18-2.68, $p<0.01$). Among patients who died during early readmission following ViV TAVR, the most common cardiac cause and non-cardiac cause of readmission were heart failure (15.4%) and infection (23.1%), respectively.

Abstract Body:

Conclusion: The early mortality following ViV TAVR was low at 3.0%. The independent factors associated with early mortality post-procedurally were chronic liver disease, coagulation disorder, and pulmonary hypertension.



Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 24

Category: Interventional and Structural

Title: LEFT MAIN PCI BIFURCATION STENTING IN A HIGHLY CALCIFIED LESION: A CHALLENGING CASE

Author Block: Deepika Dharmkare, Rabindranath Tagore international institute of cardiac sciences, Kolkata, India, India

Background: Left Main Coronary Artery (LMCA) Bifurcation angioplasty is always challenging particularly with calcification and difficult angulations. Here we present a challenging case of a highly calcified LMCA bifurcation stenosis post Bypass graft failure, stented Culotte strategy using OPN balloon for post-dilatation and kissing balloon dilatation.

Methods: A 70 year female, presenting with acute coronary syndrome and cardiogenic shock. She underwent CABG with left internal mammary artery to Left anterior descending and reversed saphenous vein graft to Right coronary artery one month before. Her check angiography after stabilisation revealed failure of both graft uptake, and LMCA bifurcation stenosis of Medina 1,1,1.

Abstract Body: **Results:** We opted for urgent IVUS guided LMCA-PCI with culotte strategy on intra-aortic balloon pump and ventilator support. Difficult wiring and NC balloon delivery taking guidewire support was followed with bifurcation culotte stenting. However inadequate stent expansion and suboptimal post-dilatation prompted us to use OPN NC balloon for post-dilatation of LMCA to LAD and finally kissing balloon dilatation using same OPN in LAD and NC in LCX. Final IVUS image showed optimal results and proper carina.

Conclusion: Calcified LMCA bifurcation may need high pressure OPN balloons for optimal results even after adequate bed preparation. Kissing balloon dilatation with OPN in major branch is a good option in such cases for aggressive calcium handling.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 25
Category: Interventional and Structural
Title: PERI PROCEDURAL STROKE IN PCI AND TAVI PATIENTS
Author Block: Kumareson Raman, AFA IBRAHIM, JOON TAN, NOTTINGHAM UNIVERSITY HOSPITAL, NOTTINGHAM, United Kingdom

Abstract Body:

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Background and Aims

Background: Periprocedural stroke is a rare complication of cardiovascular interventions, with limited data available on long-term outcomes. This retrospective audit examines patient-specific risk factors, procedural characteristics, and stroke outcomes between patients undergoing transcatheter aortic valve implantation (TAVI) and percutaneous coronary intervention (PCI).

Methods

Methods: We analyzed data from 28 patients who experienced periprocedural strokes at our institution between January 2019 and March 2024. Data on patient demographics, procedural details, stroke investigations, and outcomes were collected and analyzed using univariate statistical methods.

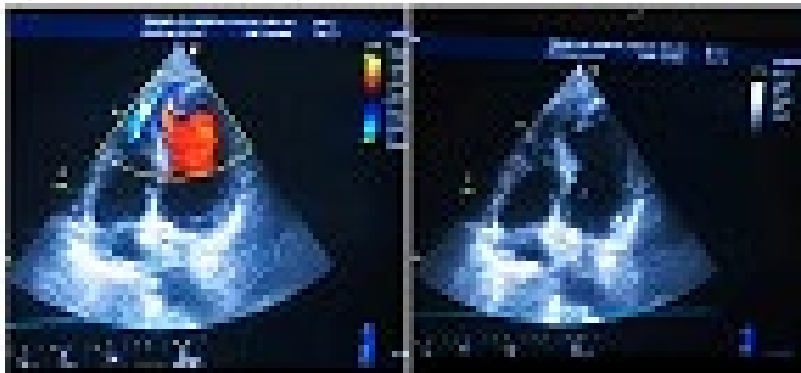
Results

Results: Patients undergoing TAVI were significantly older than those undergoing PCI (79.9 vs. 72.0 years, $p=0.022$) and had a higher prevalence of atrial fibrillation (55% vs. 12.5%, $p=0.044$). Although hypertension was more prevalent in the TAVI group (70% vs. 37.5%), it did not reach statistical significance ($p=0.112$). Procedural times were longer for TAVI (88.85 vs. 59.00 minutes, $p=0.050$), along with other distinct procedural aspects. Notably, the use of CT angiograms and thrombolysis rates were significantly higher in PCI patients (87.5% and 57.1%, respectively, $p=0.036$) compared to TAVI patients (35% and 5.3%, respectively, $p=0.003$). There were no significant differences in CT head findings, incidence of TIAs and strokes, affected vessels, length of stay, residual neurological deficits, repeat strokes, or mortality (immediate, 30-day, or at one year).

Conclusions

Conclusion: Although TAVI patients are older and exhibit a higher prevalence of atrial fibrillation, periprocedural stroke risk factors appear similarly distributed between those undergoing TAVI and PCI. These findings underscore the importance of uniform stroke prevention strategies across both procedures.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 26
Category: Interventional and Structural
Title: A CATASTROPHIC HEMATOMA FOLLOWING PRIMARY PERCUTANEOUS CORONARY INTERVENTION
Author Block: Hari Subacini Perumpadaiyan, Ravichandran JM Edwin, Balachandran Chidambaram, Viswanathan T, Anto Prabhu, Selvakumaran M.S, Thirulogachandar E, Manikandan Ramanujam, Tirunelveli Medical college hospital, Tirunelveli, India
Abstract Body:
Background: Intramyocardial dissecting hematoma (IDH) progressing to ventricular septal rupture (VSR) is one of the rare complications in acute MI which occurs subacutely.
Case: ECG of 54 year old diabetic male smoker admitted with angina for 3 hours showed acute AWM. Echo showed akinetic LAD territory, EF40%. Primary angiogram showed proximal LAD 80% tubular eccentric lesion & grade IV thrombus. PCI to LAD done, prox RCA was staged later. 5 hours after PCI patient developed acute pulmonary edema. Patient had harsh systolic murmur in left lower parasternal area and basal crepitations. Echo showed a large IDH 3.9x1.2 cm in lower 2/3 of septum with extension to apical septum causing apical VSR of 5mm with left to right shunt with no pericardial effusion. Patient was stabilized with inotropes, diuretics and surgery was planned .
Decision-making: IDH with VSR in post primary PCI is due to intramyocardial blood vessel rupture in adjacent spiral myocardium resulting in increased tissue fragility of the infarcted area. In this case it is due to reperfusion injury. The reperfused ischaemic zone will hypercontract promoting the dyschrony between the akinetic and hyperkinetic region producing a VSR. The patient is taken up for primary PCI within 3 hrs of symptom onset, his diabetic state would have made him unrecognise the symptoms earlier.
Conclusion: Mechanical complications are common with thrombolytic agents compared with primary PCI. History taking has also got its special implications in diabetic patients.



Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 27
Category: Interventional and Structural
Title: TAKOTSUBO CARDIOMYOPATHY POST TRANSCATHETER MITRAL VALVE REPLACEMENT : RARE BUT EXISTS !
Author Block: Sourabh Agstam, Abhinav Jain, Sandeep Seth, Rajiv Narang, All India Institute of Medical Sciences, New Delhi, India
Background: A 75-year-old gentleman presented to our hospital with acute worsening shortness of breath New York Heart Association class IV associated with cough and low-grade fever for 10 days. He was a case of Mitral Valve Prolapse with severe mitral regurgitation, for which he underwent Mitral Valve Repair (MV Repair) in 2005; and MVR with 27mm Perimount Magna in 2013.
Case: A 75-year-old gentleman, a known case of bioprosthetic MVR in 2013 complained of gradually worsening dyspnea for 2 years and acute worsening for 10 days. Echocardiography showed Stage III bioprosthetic valve degeneration with severe restenosis, gradients of 28/12 mmHg across the mitral valve, normal left ventricle function and severe pulmonary artery hypertension (Video 1). Patient showed partially response to intravenous diuretics and antibiotics. Patient underwent Transcatheter Mitral Valve Replacement (TMVR) for Bioprosthetic mitral valve degeneration (Video 2). After 24 hours of stay in intensive care, patient developed hypotension and decreased urine output. Echocardiography revealed left anterior descending artery territory hypokinesia with basal hypercontractility and drop in ejection fraction to 15-20% (Video 3). There were no dynamic changes in an EKG and no elevation of troponins. Patient was diagnosed with Takotsubo cardiomyopathy (TTC) and received intravenous dobutamine and infusion Lasix for 4 days, gradually his BP and left ventricle function improved over the 2 weeks (Video 4).
Decision-making: The development of left ventricle dysfunction in Post TMVR is rare. There were two differentials while treating the patient : Acute coronary syndrome and TTC . Serial EKGs showed no dynamic changes and Troponin levels were not elevated favoured TTC. The complete recovery of ejection fraction within 2 weeks further favoured TTC. Although TTC is traditionally defined in elderly female and precipitated by stress; the index case was elderly male with bioprosthetic valve degeneration.
Conclusion: Possibility of TTC should be kept in Post TMVR left ventricle dysfunction. Transient support with inotropes to the left ventricle may help in early recovery. This is the second case of TTC post TMVR which is reported so far.

Abstract Body:

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 29
Category: Ischemic Heart Disease
Title: COMPARISON OF CLINICAL AND ANGIOGRAPHIC PROFILES OF PATIENTS WITH OR WITHOUT LEFT MAIN CORONARY ARTERY DISEASE
Author Block: Suman Kumar Biswas, Fakhrul Islam Khaled, Manzoor Mahmood, Fazlur Rahman, Mohammad Safiuddin, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Dhaka, Bangladesh, Directorate General of Health Services (DGHS), Dhaka, Dhaka, Bangladesh
Abstract Body:
Background: Left main coronary artery (LMCA) disease constitutes the highest risk lesion subset of coronary artery disease (CAD) population. Flow dynamics and pathophysiology in LMCA are different from that of other coronaries. So traditional risk factors might interact differently with LMCA resulting in different clinical and angiographic characteristics compared to others.
Methods: It was a comparative analytical study. For one year 91 adult CAD patients were studied who underwent coronary angiogram, divided into two groups: LMCA and Non-LMCA and then compared to see if any statistically significant difference present or not.
Results: The mean age with standard deviation in LMCA was 55.2±9.4 and in non-LMCA 55.5±12.9; it showed no statistically significant difference. Most were male 69 (76%) and comparison revealed male gender to be significantly associated ($p=0.046$) with LMCA cohort. Among risk factors, diabetes and family history of CAD had significant association ($p<0.05$). Non-ST elevated ACS was the most common presentation and had significant association with LMCA group ($p<0.05$). On coronary angiogram, 80 patients (87.92%) had no LMCA disease while 11 (12.08%) had so. The comparison revealed no statistically significant difference ($p>0.05$). Triple vessel disease and distal lesions (64%) found more frequently.
Conclusion: Male gender, diabetes mellitus, positive family history of CAD and presentation with non-ST elevation ACS were found to be significantly associated with LMCA disease.



Figure: Coronary angiogram of a 48-year-old patient showing 95% stenosis in ostio-proximal left main coronary artery

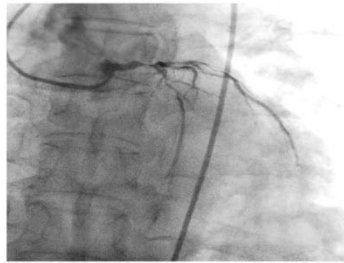


Figure: Coronary angiogram of a 60-year-old patient showing 99% stenosis in distal left main coronary artery

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 30

Category: Ischemic Heart Disease

Title: PLAQUE RUPTURE MASQUERADING AS SPONTANEOUS CORONARY ARTERY DISSECTION: INTRAVASCULAR ULTRASOUND INSIGHTS

Author Block: Ashwin Kodliwadmath, Ezhilan Janakiraman, Mullasari Ajit Sankardas, The Madras Medical Mission, Chennai, India

Background: A 49-year-old gentleman, known diabetic presented to us with unstable angina. Coronary angiogram revealed significant stenosis with double lumen in the proximal left anterior descending (LAD) coronary artery (Fig1A, 1B).

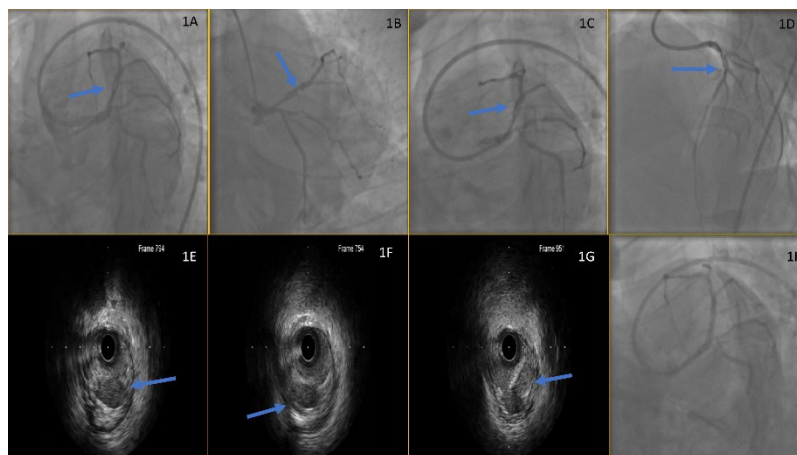
Case: In view of ongoing angina, he was taken up for intravascular ultrasound (IVUS) to determine the pathology. Wiring the lesion was difficult, with the wire repeatedly entering the false lumen/cavity of ruptured plaque (Fig 1C, D).

Finally, the lesion was wired successfully using a workhorse wire. IVUS done from LAD to left main coronary artery (LMCA) revealed a ruptured plaque with cavity (Fig 1E, F) with thrombus (Fig 1G) in the proximal LAD.

Decision-making: Ruptured plaque on IVUS made us proceed with percutaneous coronary intervention (PCI). After appropriate lesion preparation and stent sizing, the lesion was stented with 3X33mm Ultimaster Tansei stent from LMCA ostium to proximal LAD. The stent was post dilated along with proximal optimization technique to achieve an acceptable result (Fig 1H).

Conclusion: Though a type 3 SCAD is known to mimic atherosclerosis, type 1 SCAD with dual lumen appearance can be due to atherosclerotic plaque rupture, differentiated on IVUS. Wiring a lesion with plaque rupture can be challenging with the wire entering the plaque cavity, akin to entering the false lumen of a SCAD. Though intravascular imaging is recommended for type 2 and 3 SCAD to differentiate from other causes, it can play a pivotal role even in suspected type 1 SCAD.

Abstract Body:



Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 33

Category: Ischemic Heart Disease

Title: EFFECT OF CORONARY MICROEMBOLIZATION ON AUTOPHAGY-RELATED MICRORNA AND PROTEIN PATHWAYS STUDY

Author Block: Yajun Xue, Lange Li, Beijing tsinghua changgung hospital, BEIJING, People's Republic of China

Background: Coronary microembolization (CME) commonly occurs during PCI in acute coronary syndrome, leading to myocardial damage. The purpose of this study is to explore the effects of CME on autophagy-related microRNAs and protein pathways, and to identify possible mechanisms of myocardial injury caused by CME.

Methods: This study randomly divided rats into 6 groups: sham and CME1h, 3h, 6h, 9h, 12h groups. A rat model of CME was established by injecting autologous microthrombi into the left ventricle. Echocardiography and HE staining were performed to evaluate myocardial infarct size in each group. The expression of microRNA-144-3p and microRNA-214-3p, LC3-II, p62/SQSTM1, phosphatase, and PTEN was detected.

Abstract Body:

Results: Compared with the sham group, LVEF and LVFS decreased, LVESD increased ($P < 0.05$) in the CME3h, 6h, 9h, and 12h groups, the myocardial infarct area significantly increased in the CME6h group ($P < 0.05$). The expression of microRNA-144-3p and microRNA-214-3p in myocardial tissue increased after CME, reaching a peak at 1h ($P < 0.05$); LC3II decreased at CME1h ($P < 0.05$) and significantly increased in the CME6h group ($P < 0.05$). p62/SQSTM1 increased at CME1h ($P < 0.05$) and then gradually decreased, while PTEN increased after CME3h (all $P < 0.05$), with a peak at 6h

Conclusion: Autophagy showed dynamic changes after CME, suggesting that enhanced autophagy aggravates myocardial damage after CME. Related microRNAs and PTEN are involved in the regulation of autophagy after CME.

EFFECT OF CORONARY MICROEMBOLIZATION ON AUTOPHAGY-RELATED MICRORNA AND PROTEIN PATHWAYS STUDY

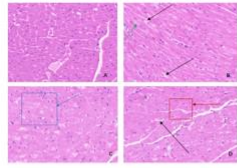


Fig1 rat myocardial tissue HE staining results (scale=50μm) including m note: A group for shame, B, C, D as the CME group, black arrow in the coronary microcirculation embolism ball, green arrow cells edema, blue arrow cells arranged disorder, red arrow nucleus dissolved, hyperchromatic cells

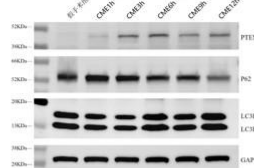


Fig.2 Myocardial WB results of rats in each group

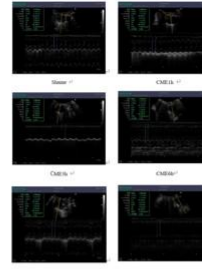


Fig.3 Cardiac indexes of rats in each group were detected by ECHO

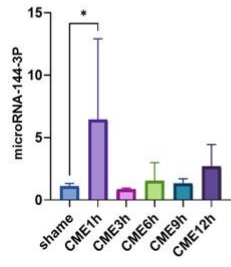


Fig.4 Comparison of myocardial microRNA-144-3p results in rats of each group

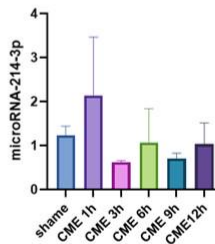


Fig.5 Comparison of myocardial microRNA-214-3p results in rats of each group

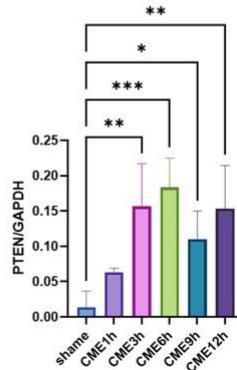


Fig.6 Comparison of myocardial PTEN results in rats of each group

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 31

Category: Ischemic Heart Disease

Title: ST ELEVATION MYOCARDIAL INFARCTION IN THE ELDERLY: A REGISTRY FROM A SMALL INDIAN TOWN

Author Block: Pradeep Chakravarthy Subash, Raju Puthoniyil, Charulatha Pradeep, Aadharshini Pradeep, Sivakani Subash, Dr Sivakani Hospital, Udumalpet, India

Abstract Body:

Background: Elderly STEMI patients present a dilemma to the treating cardiologist in India. Frailty, multiple co-morbidities, increased bleeding risk along with personal preference affect the decision regarding treatment. There is however, paucity of exclusive clinical data regarding elderly STEMI patients in India. Our cardiac centre, with the only cardiac catheterisation laboratory for the surrounding 30km radius, is located in a small South Indian town. We aim to look at the demographics, clinical characteristics, treatment and in hospital outcomes of elderly STEMI patients at our centre.

Methods: All consecutive STEMI patients aged 70 years and above, admitted at our centre from September 2016 to February 2024 were included in the study. Data were collected prospectively by the senior staff nurse, checked by the cardiologist and then entered in a spread sheet for analysis.

Results: A total of 91 patients were included in the analysis. 65 (71.4%) were male and 26 (28.5%) were female. Only 20 (22%) patients presented within 1 hour of symptom onset. Of the 91 patients, 18 (19.7%) had spontaneous reperfusion, 49 (53.8%) were thrombolysed, 14 (15.3) underwent primary Percutaneous Coronary Intervention (pPCI) and 10 (10.9%) did not receive any reperfusion therapy. The mean door to needle time and the mean door to balloon time were 43 minutes and 118 minutes respectively. Streptokinase, used in 26 (53%) patients was the most commonly used thrombolytic agent. 5 (10.2%) patients had failed thrombolysis. Out of the 62 patients who had either spontaneous reperfusion or successful thrombolysis, 21 (33.8%) underwent a coronary angiogram and 10 (16.1%) underwent PCI at our centre. 10 (10.9%) patients died either in hospital or immediately after transfer/discharge.

Conclusion: This registry gives interesting insights regarding elderly STEMI patients presenting in a small Indian town. Only less than one fourth of the patients presented early. The reperfusion rates were reasonable but only around one third were managed invasively. There is clearly scope for improvement in various aspects of STEMI management, both from the patient and physician perspective.

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 34

Category: Ischemic Heart Disease

Title: EFFECTIVENESS AND TOLERABILITY OF METOPROLOL SUCCINATE EXTENDED RELEASE, TELMISARTAN AND CHLORTHALIDONE FIXED DOSE COMBINATION ON BLOOD PRESSURE CONTROL IN PATIENTS OF ESSENTIAL HYPERTENSION WITH STABLE CORONARY ARTERY DISEASE IN INDIA: A SUBGROUP ANALYSIS OF A REAL-WORLD RETROSPECTIVE STUDY FROM ELECTRONIC MEDICAL RECORDS (MECHANO STUDY) IN PATIENTS STRATIFIED BY AGE

Author Block: M. Vijaykumar, Arindam Pande, Rama Kumari, Soumya Dutta, susheel reddy, Vijay Chile, Amey Mane, Neeraj Markandeywar, Prachi Ahire, [Prakadeesh Bharathi](#), VINAY KUDRIGIKAR, Shruti Dharmadhikari, Chintan Khandhedia, Suyog Mehta, Sadhna Joglekar, MECHANO study group, Sun Pharma Laboratories Limited, Mumbai, India

Background: We conducted real world study to assess effectiveness (on blood pressure [BP; mmHg]) and tolerability of fixed dose combination (FDC) of 25/50mg Metoprolol + 40mg Telmisartan + 12.5 mg Chlorthalidone in treating hypertension and stable coronary artery disease (CAD). Given the onset of CAD and hypertension at younger age in Indian population, we assessed effectiveness of this FDC across age groups.

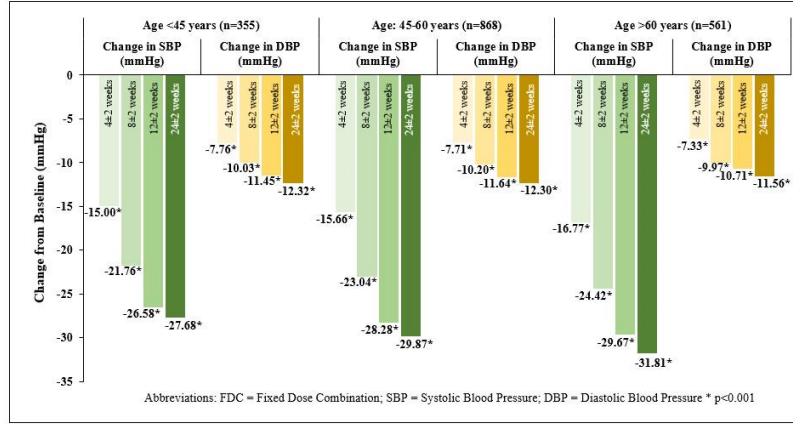
Abstract Body: **Methods:** A retrospective, multicenter study retrieved data over 15 months from electronic medical records of 1,810 adult patients with essential hypertension [systolic BP (SBP) \geq 140 and/or diastolic BP (DBP) \geq 90] and stable CAD; of which 1,784 patients received this FDC for 24 \pm 2 weeks. Mean change in BP from baseline, proportion of patients achieving target BP (SBP < 140 and DBP < 90) and incidence of adverse events were analyzed in subgroups [S1: <45 years (n=355); S2: 45-60 years (n=868); S3: > 60 years (n=561)].

Results: Mean changes in SBP (S1, -27.7; S2, -29.9; S3, -31.8) and DBP (S1, -12.3; S2, -12.3; S3, -11.6) from baseline to 24 \pm 2 weeks were significant (p<0.001). Mean changes in BP at 4/8/12 \pm 2 weeks were also significant (p<0.001), >83% patients achieved target BP at 24 \pm 2 weeks in each subgroup. Overall, 14 patients (S1, 3; S2, 8; S3, 3) reported adverse events; hypotension being most common.

Conclusion: In real-world settings, FDC of Metoprolol + Telmisartan + Chlorthalidone was effective and well-tolerated in patients with hypertension

and CAD across all age groups.

Figure 1: Changes in SBP and DBP in patients of different age groups treated with FDC of Metoprolol + Telmisartan + Chlorthalidone



Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 35

Category: Ischemic Heart Disease

Title: EFFECTIVENESS AND TOLERABILITY OF METOPROLOL SUCCINATE EXTENDED RELEASE, TELMISARTAN AND CHLORTHALIDONE FIXED DOSE COMBINATION ON BLOOD PRESSURE CONTROL IN MEN AND WOMEN PATIENTS OF ESSENTIAL HYPERTENSION WITH STABLE CORONARY ARTERY DISEASE IN INDIA: A STRATIFIED ANALYSIS OF A REAL- WORLD RETROSPECTIVE STUDY FROM ELECTRONIC MEDICAL RECORDS (MECHANO STUDY)

Author Block: M. Vijaykumar, Arindam Pande, Rama Kumari, Soumya Dutta, susheel reddy, Vijay Chile, Amey Mane, Neeraj Markandeywar, Prachi Ahire, Prakadeesh Bharathi, VINAY KUDRIGIKAR, Shruti Dharmadhikari, Chintan Khandhedia, Suyog Mehta, Sadhna Joglekar, MECHANO study group, Sun Pharma Laboratories Limited, Mumbai, India

Background: We conducted real world study to assess effectiveness (on blood pressure [BP; mmHg]) and tolerability of fixed dose combination (FDC) of 25/50mg Metoprolol + 40mg Telmisartan + 12.5 mg Chlorthalidone in treating hypertension and stable coronary artery disease (CAD). Cardiovascular disease develops 7-10 years later in women than in men but is still the major cause of death in women. This subgroup analysis assessed gender specific differences, if any.

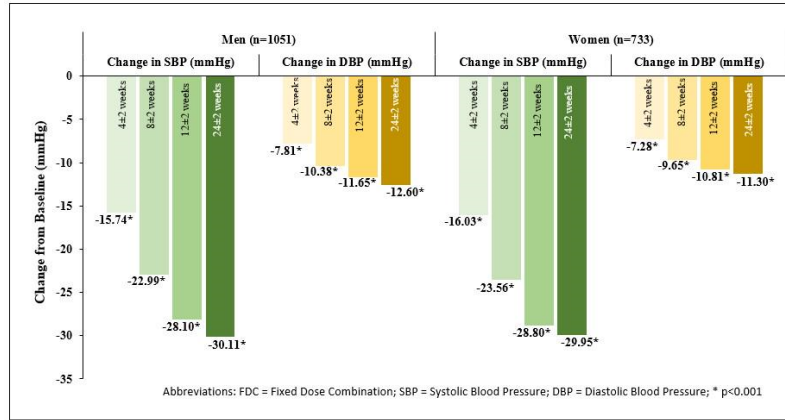
Abstract Body: **Methods:** A retrospective, multicenter study retrieved data over 15 months from electronic medical records of 1,810 adult patients with essential hypertension [systolic BP (SBP) \geq 140 and/or diastolic BP (DBP) \geq 90] and stable CAD; 1,784 received this FDC for 24 \pm 2 weeks. Mean change in BP from baseline, proportion of patients achieving target BP (SBP < 140 and DBP < 90) and incidence of adverse events was analyzed in 1,051 men and 733 women.

Results: Mean change in SBP and DBP from baseline to 24 \pm 2 weeks in men (-30.1 and -12.6) and women (-29.9 and -11.3) was significant ($p < 0.001$). Mean change in SBP and DBP in men and women at 4/8/12 \pm 2 weeks, were significant ($p < 0.001$), Fig 1. At 24 \pm 2 weeks, proportion of men and women achieving target BP was similar (84.4% vs 84.5%, $p = 0.98$). Adverse events were reported by 7 men and 7 women; hypotension being the most common.

Conclusion: In real world setting, FDC of Metoprolol + Telmisartan + Chlorthalidone was equally effective and well tolerated in men and women

with hypertension and CAD.

Figure 1: Changes in SBP and DBP in men and women treated with FDC of Metoprolol + Telmisartan + Chlorthalidone



Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 36
Category: Ischemic Heart Disease

Title: ECHOCARDIOGRAPHIC ASSESSMENT OF DIFFERENT MECHANISMS OF ISCHEMIC MITRAL REGURGITATION IN PATIENTS WITH INFERIOR AND ANTERIOR MYOCARDIAL INFARCTION

Author Block: Arvind Kumar, Gopi A, Fortis Hospital, Cunningham Road, Bengaluru, India

Abstract Body:

Background: Ischemic mitral regurgitation (IMR) occurs due to displacement of the papillary muscles (PMs) from left ventricular (LV) remodeling. This study examines the severity and mechanisms of IMR in patients with previous inferior or anterior myocardial infarction (MI).

Methods: The study included 50 patients with moderate to severe IMR: 25 with inferior wall MI and 25 with anterior wall MI. Echocardiographic measurements included LV volume, mitral annular diameter, E wave velocity, mitral leaflet tenting height and area, coaptation length, and PM tethering distance. IMR severity was evaluated using vena contracta width, jet/left atrial area, effective regurgitation orifice area, mitral regurgitation (MR) volume, and MR fraction.

Results: Of 50 patients, 31 had moderate MR, 10 had moderate to severe MR, and 9 had severe MR. The severity of MR, mitral annular diameter, tenting height, area, and coaptation length were similar between groups. However, the intra PM distance was significantly greater in the anterior MI group (2.4 cm vs 1.9 cm; $p = 0.002$). Global LV dilatation and dysfunction were less severe in the inferior MI group (end-systolic volume: 67 ± 27 mL vs 93 ± 40 mL; $p = 0.012$; ejection fraction: $45 \pm 8\%$ vs $40 \pm 9\%$; $p = 0.036$). In the inferior MI group, the medial PM tethering distance was longer than the lateral PM (4.4 ± 0.3 cm vs 3.5 ± 0.3 cm; $p < 0.001$), indicating asymmetric displacement. The anterior MI group had similar tethering distances for both PMs (3.7 ± 0.7 cm vs 3.5 ± 0.5 cm), showing symmetric bilateral displacement. Regression analysis identified the medial PM tethering distance as an independent determinant of tenting area and jet/LA area in inferior MI, while in anterior MI, the combined tethering distances of lateral and medial PMs determined MR volume and fraction.

Conclusion: The mechanism of IMR in inferior MI is asymmetric displacement of the medial PM due to localized LV remodeling, while anterior MI results in symmetric displacement of both PMs. Targeted therapeutic approaches for these displacement patterns could improve patient outcomes.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 37
Category: Multimodality Imaging

Title: THE UTILITY OF LEFT VENTRICULAR GLOBAL LONGITUDINAL STRAIN FOR ASSESSMENT OF SUBCLINICAL MYOCARDIAL DYSFUNCTION IN COVID-19 PATIENTS

Author Block: Amanpreet Singh Wasir, Marzieh Tajmirrahi, Mohammad Bagher Maleki, Niloofar Javadi, Amin Dehghan, Isfahan University of Medical Sciences, Isfahan, Iran (Islamic Republic of)

Abstract Body:

Background: Cardiovascular complications have been increasingly reported in patients affected with coronavirus disease 2019 (COVID-19) leading to significant morbidity and mortality. Left ventricular global longitudinal strain (LV-GLS) and left ventricular ejection fraction (LVEF) are important markers of myocardial function that may be affected by COVID-19. The impact of COVID-19 on myocardial function, specifically on LV-GLS and LVEF remains unclear. Our study aims to evaluate LV-GLS and LVEF in both hospitalized and non-hospitalized patients affected with COVID-19.

Methods: A prospective cohort study in design, included 95 COVID-19 patients (40 hospitalized and 55 non-hospitalized). All patients underwent transthoracic echocardiography at one- and six-months follow-up. LV-GLS was measured using apical 2-, 3- and 4- chamber views using speckle tracking analysis. LVEF was calculated using biplane Simpson's method. LV-GLS and LVEF were compared between hospitalized vs. non-hospitalized patients. $P < 0.05$ was significant.

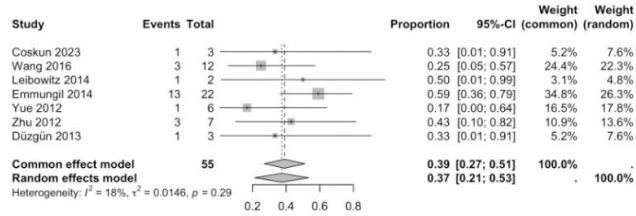
Results: Total 82 COVID-19 patients (40% male) were evaluated at one- and six-months post-diagnosis. Hospitalized patients ($n=35$) were older than non-hospitalized ($n=47$) patients (mean age= 51.9 years vs 45.4 years; $p=0.029$, males= 57% vs 28%, $p=0.007$ respectively). No significant changes were found in LVEF of either group between the two time points (hospitalized vs. non-hospitalized= $0.14 \pm 1.48\%$ vs. $-0.64 \pm 2.24\%$; $p=0.061$ respectively). LV-GLS significantly improved after 6-months in both groups (hospitalized vs. non-hospitalized= $0.92\% \pm 1.82\%$; $p=0.008$ vs. $0.66\% \pm 1.90\%$; $p=0.022$ respectively). Patients with the lowest baseline LV-GLS ($<15\%$) showed the greatest improvement at 6-months (2.17%, $p < 0.001$) which was significantly greater than those with higher baseline LV-GLS.

Conclusion: LV-GLS is useful for detecting subclinical myocardial dysfunction in both hospitalized and non-hospitalized patients. Greatest improvement in LV-GLS was seen after 6-months in COVID-19 patients, especially those having the lowest baseline LV-GLS. LV-GLS may be a more sensitive tool than LVEF for identifying early myocardial dysfunction in such patients.

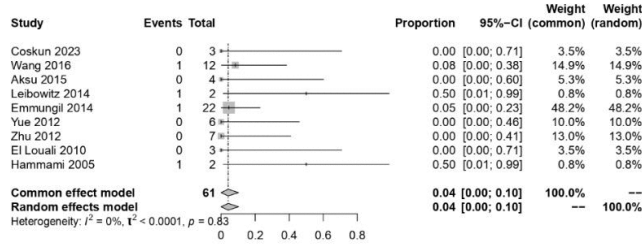
Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 38
Category: Multimodality Imaging
Title: INTRA-CARDIAC THROMBUS IN BEHCET DISEASE : A SYSTEMATIC REVIEW AND META-ANALYSIS
Author Block: Krish Kuhar, Anuraag Punekollu, Maria Eduarda Liporaci Moreira, Liron Leibovitch, Elizabet Taylor Pimenta Weba, Diego Salles Granzinoli, Victor Alejandro Gomez, Christopher Boaventura, Khaled Saud Al-Hwaishel, Gabriel De Moraes Mangas, Shanmukh Sai Pavan Lingamsetty, Mangesh Kritya, Hamza Ansari, Sivanand Patel, Dr. Baba Saheb Ambedkar Medical College and Hospital, Delhi, India
Abstract Body:
Background: Intracardiac thrombus in Behcet disease (ICT-BD) is a rare but severe complication with a poor prognosis. The data describing treatment outcomes remains limited in the literature to date.
Methods: We performed a systematic review of literature following the Preferred Reviewing Items for Systematic Review and Meta-analysis (PRISMA) guidelines and searched PubMed, Embase and Web of Science. The databases were searched until March 2024 for original English articles, each including atleast 2 patients of any age treated for ICT-BD. The assessed outcomes include post-treatment thrombus disappearance, recurrence, and mortality. Statistical analysis was performed using the R program. The random effects model with 95% Confidence Interval (CI) was used. The heterogeneity was evaluated using I2 statistics.
Results: We included 84 patients from 13 studies, of which 71.4% who developed intracardiac thrombus were male. The preferred mode of diagnosis was transthoracic echocardiography. The meta-analysis reported the occurrence of post-treatment thrombus disappearance in 37% (95% CI, 0.21-0.53%, p = 0.29, I2 = 18%), recurrence in 4% (95% CI, 0.00-0.10%, p = 0.83, I2 = 0%), post-treatment mortality in 5% (95% CI, 0.00-0.12%, p = 0.55, I2 = 0%).
Conclusion: The meta-analysis concludes that treatment significantly increases the chances of thrombus disappearance with minimal chances of mortality and recurrence. Studies with larger sample sizes are required to

reach firm conclusions.

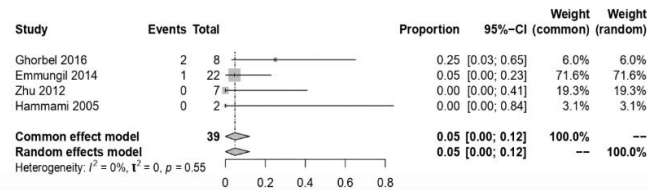
Post-treatment thrombus disappearance



Post-treatment thrombus recurrence



Post-treatment mortality



Session Title: Saturday Afternoon Poster Session
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 39

Category: Prevention and Health Promotion
Title: USING SELF-REPORTED QUESTIONNAIRES TO ESTIMATING CARDIORESPIRATORY FITNESS IN PATIENTS WITH CORONARY ARTERY DISEASE

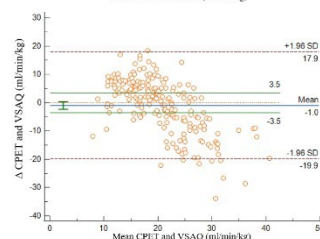
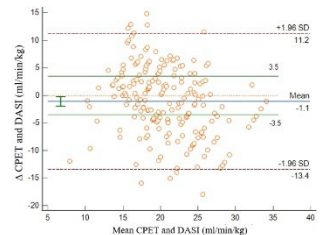
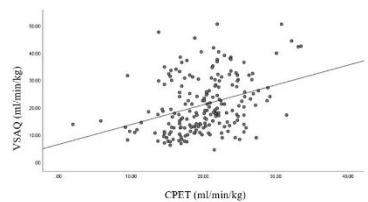
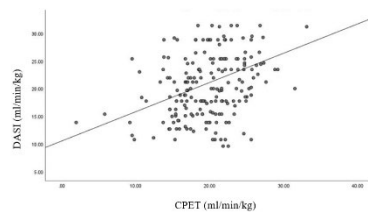
Author Block: Haofeng Zhou, Huan Ma, Lan Guo, Qingshan Geng, Guangdong Cardiovascular Institute, Guangdong Provincial People's Hospital, Guangzhou, People's Republic of China, Shenzhen People's Hospital, Shenzhen, People's Republic of China

Background: Peak oxygen uptake (peakVO₂) is a significant predictor of cardiovascular morbidity and mortality among individuals with coronary artery disease (CAD). However, conducting cardiopulmonary exercise testing (CPET) is often impractical in resource-limited settings. The Duke Activity Status Index (DASI) and Veterans Specific Activity Questionnaire (VSAQ) are recommended by the Chinese Society of Cardiology as alternative methods, but have not been validated in CAD populations.

Methods: Patients with CAD from three centers were eligible for the study. Participants completed DASI and VSAQ to estimate peakVO₂, and actual peakVO₂ was measured using a symptom-limited maximal CPET.

Results: 204 CAD patients (177 men, 58.32±10.99 years) were included with mean peakVO₂ of 20.02±4.8 mL/kg/min at CPET. Correlation analysis revealed moderate correlations between DASI and CPET (r=0.373), as well as between VSAQ and CPET (r=0.431). Bland-Altman analysis indicated the mean bias for estimated peakVO₂-DASI versus CPET-determined peakVO₂ was 1.10 ml/min/kg (LoA -13.43 to 11.22 ml/min/); mean bias for estimated peakVO₂-VSAQ versus CPET-determined peakVO₂ was 1.00 ml/min/kg (95% LoA -19.89 to 17.89 ml/min/kg).

Abstract Body: **Conclusion:** DASI and VSAQ are moderately accurate tools for estimating cardiorespiratory fitness in CAD population. For use in individual patients, efforts should be made to improve the accuracy in this specific patient group.



Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 40

Category: Prevention and Health Promotion

Title: DISCONNECTED HEARTS: A GLOBAL CROSS-SECTIONAL STUDY ON NOMOPHOBIA AMONG CARDIOLOGY PROFESSIONALS

Author Block: Abhishek Kashyap, Hans Mautong, Aakanksha Singh, Priyal Mehta, Smitesh S. Padte, Akshat Banga, Diksha Mahendru, Abdulhadi Alotaibi, Amandeep Sandhu, Usha Kumari, Aishwarya Gupta, Tanja Kovacevic, Zara Arshad, Salim Surani, Faisal A. Nawaz, Rahul Kashyap, For GRRSP-Global 3-P Study Group, Sir Seewosagur Ramgoolam Medical College, Belle Rive, Mauritius, Global Remote Research Scholars Program, St. Paul, MN, USA

Abstract Body:

Background: Mobile phone use has transformed the healthcare industry, with ubiquitous AI tools, electronic medical records, and teleconsultations becoming crucial. However, nomophobia (NMP), or "No Mobile Phone Phobia" has become more prevalent, and providers may experience anxiety or nervousness when separated from their phones. We aim to explore the prevalence, severity, and risk factors of NMP among Cardiology professionals (CP)s.

Methods: A global cross-sectional study was conducted from April-July 2023. Using social media, a web-based modified NMP questionnaire (mNMP-Q) was distributed and responses from cardiologists, nurses, and telemetry technicians were collected. Univariate and multivariate analyses were done to determine risk factors of moderate-to-severe NMP. The study was IRB-exempted.

Results: A total of 158 responses from CPs from 33 countries were included, with 52.5% of respondents being male and 57% aged 26-35. Saudi Arabia (26.6%), the US (17.7%), and Pakistan (8.9%) were the top responders. West Asians comprised 26.6% of the sample, South Asians 26%, and Caucasians 17.7%. Around 52.5 % indicated >2hrs of smartphone use for work, while 74% reported >4hrs of personal use. About 67.6% of participants were iOS users. The median mNMP-Q score was 47 (39-52). While 8.2% of participants met the criteria for mild NMP, 91.8% met the moderate-severe NMP criteria. CP with ages 56-65 (OR=0.04, p=0.0001) and >65 (OR=0.07, p=0.049) were associated with a lower risk of moderate to severe NMP when compared to the 26-35 age group. On the multivariate model, only the 56-65 age group (OR=0.03, p=0.0001) remained statistically significant after adjusting for gender and smartphone type.

Conclusion: Our study denotes that over 90% of CP self-reported moderate to severe NMP on the mNMP-Q, whereas an older age (56-65) was associated with significantly reduced risk. Identifying and managing NMP is crucial for the improved mental well-being of CPs in the digital era.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 41
Category: Prevention and Health Promotion
Title: BLOOD PRESSURE MEASUREMENT KNOWLEDGE AMONG FINAL YEAR MEDICAL STUDENTS AN INTERVENTIONAL PRE-POST ANALYSIS
Author Block: Niragh Sikdar, Rohan Raj, Sree Abhilekha Purohit, Zia Ul Haq, Xi'an Jiaotong University School of Medicine, Xi'an, People's Republic of China, Medical College & Hospital Kolkata, Kolkata, India
Abstract Body:
Background: Hypertension is a widely prevalent and frequently asymptomatic chronic condition that is a leading cause of mortality and disability-adjusted life years, which is a measure of the health burden in a given country. The current study was done to assess the effect of an educational intervention both on the understanding of taking correct blood pressure measurements and on diagnosis of hypertension by the medical students.
Methods: An interventional study was done among 94 final-year medical students at a tertiary health care hospital in China from March to August 2023. A validated questionnaire was given before the educational intervention and back again one month after it, which involved didactic lectures, case studies, demonstrations, and interactive sessions on blood pressure measurement and hypertension diagnosis. Data were processed using SPSS, and the chi-square or Fisher's exact tests were employed to assess the practical effect of the intervention on students' knowledge.
Results: Final participants were 92 in total. The educational intervention increased knowledge concerning patient preparation before blood pressure readings ($p > 0.001$), the impact of the cuff size on the results ($p > 0.001$), factors that influence a wrong diagnosis ($p > 0.001$), and the right time for subsequent measurement ($p > 0.001$). In the final analysis, contributed knowledge in regards to hypertension diagnosis had a statistically significant increase in the post-intervention group as compared to the pre-intervention group.
Conclusion: The study results show a high efficacy of the educational intervention in mastering competencies related to correct blood pressure measurement and hypertension diagnosis in the students' knowledge and understanding. This tells us the need to tailor medical school curriculum with the inclusion of complete training on blood pressure measurement and hypertension diagnosis as a continuous medical educational program. With the course of overview and bedside experience, future physicians can build a set of skills that are essential for proper hypertension identification and management. This will, ultimately, result in better patient care and cardiovascular health.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 43
Category: Prevention and Health Promotion
Title: CO-RELATION OF SERUM URIC ACID AND HYPERTENSION: AN OBSERVATIONAL STUDY IN NORTH INDIANS
Author Block: Abhishek Garg, Gurpreet Singh Wander, Abhishek Goyal, Anshuman Gupta, Akash Batta, Gautam Singal, Bishav Mohan, Naved Aslam, Shibba Takkar Chhabra, Dayanand Medical College and Hospital, Ludhiana, India
Abstract Body:
Background: Previous studies suggest a connection between high serum uric acid (SUA) levels and hypertension. Obesity and alcohol intake also contribute to uric acid overproduction. This study aims to look at the relationship between SUA levels and hypertension.
Methods: This is a retrospective observational study in which the records of 12,475 adults who underwent outpatient health check-up from January 2018 to December 2022 were collected. Weight, height, and along with waist-hip ratio were measured. Blood pressure (BP) was recorded using a digital apparatus (Omron HBP-1320). Blood samples were collected to assess SUA levels. In both genders for standardized evaluation waist-hip ratio (WHR) and high SUA were defined as more than 0.8 and 7.0mg/dl respectively.
Results: There were 8,772 males and 3,703 females, with a mean age of 53.8 years. Mean uric acid levels were 5.8 mg/dl for males and 4.9 mg/dl for females and high SUA were in 17.3% and 5.9% respectively as shown in Table 1. Hypertension affected 6,635 individuals (53.1%), while hyperuricemia was found in 1,777 patients (14.2%). Analysis, detailed in Table 1, revealed a significant correlation between hyperuricemia and obesity, indicated by BMI and WHR ($P < 0.001$). Hypertension showed significant association with hyperuricemia ($P < 0.001$).
Conclusion: Our study shows a significant co-relation between SUA levels

and hypertension.

TABLE 1- DATA OF THE STUDY PARTICIPANTS ACCORDING TO SUA

Characteristics	Overall (N=12475)	Uric acid (mg/dl)			
	N (%)	Mean	P value	High N (%)	P value
Age (years)					
• <30	169 (1.3)	5.8 ± 1.4	0.21*	37 (21.9)	0.13** (8.7)***
• 30-65	10,353 (83.0)	5.5 ±1.4		1,450 (14.0)	
• >65	1,953 (15.7)	5.6 ±1.4		290 (14.6)	
Sex					
• Male	8,772 (70.3)	5.8 ± 1.3	<0.001*	1,560 (17.8)	<0.001** (303.0)***
• Female	3,703 (29.7)	4.9± 1.3		217(5.9)	
Obesity BMI (kg/m ²)					
• <18.5	85 (0.6)	4.8 ±1.4	<0.001*	9(10.6)	<0.001** (109.7)***
• 18.5-24.9	3,028 (24.3)	5.3 ±1.3		292(9.6)	
• 25.0-29.9	5,688 (45.6)	5.6 ±1.4		791 (14.0)	
• ≥30.0	3,674 (29.5)	5.8 ±1.4		685(18.6)	
WHR					
• ≤0.80	87 (0.7)	4.8 ±1.2	<0.001*	5 (5.7)	<0.02** (5.1)***
• >0.8	12,388 (99.3)	5.6 ±1.4		1,772(14.3)	
Hypertension					
• Yes	6,635 (53.1)	5.6 ±1.4	<0.001*	1,067(16.0)	<0.001** (39.1)***
• No	5,840 (46.9)	5.4 ±1.3		710(12.1)	

*Anova **Pearson chi-square ***Pearson chi-square value

WHR- Waist Hip Ratio, BMI- Body Mass Index

Session Title: **Saturday Afternoon Poster Session**

Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 44

Category: Prevention and Health Promotion

Title: EFFECTS OF LONG-TERM CAFFEINE CONSUMPTION ON RECOVERY OF HEART RATE AND BLOOD PRESSURE TO BASELINE LEVELS: A CROSS-SECTIONAL STUDY

Author Block: Nency Kagathara, Jugal Bhatt, Jimmy Kagathara, Samprada Tank, Maurya Joshi, Kahan S. Mehta, Zydus Medical College and Hospital, Dahod, India

Abstract Body:

Background: With chronic consumption of caffeine and caffeinated drinks, the autonomous nervous system becomes sensitized to caffeine's effects, resulting in a sustained elevation of heart rate and blood pressure over time. This prolonged modulation can contribute to cardiovascular issues such as hypertension and increased risk of cardiovascular events.

Methods: Our study recruited 100 normotensive and healthy individuals aged between 18 to 45 through random sampling. Participants had their blood pressure and pulse measured and data regarding sociodemographics and daily caffeine intake were gathered. Subsequently, participants underwent a 3-minute step test, followed by blood pressure and heart rate measurements at 1 and 5 minutes post-test.

Results: A total of 92 participants completed the study of which majority of them were males (62%), above 30 years of age (60%), and residing in urban areas (79.3%). Among the participants, 19.6% were identified as consuming more than 400mg of caffeine daily. Females ($p < 0.05$), individuals employed in business and management roles ($p < 0.01$), and those living in urban areas ($p < 0.05$) showed significant associations with higher daily caffeine intake ($> 400\text{mg}$). Specifically, participants who consumed over 600mg of caffeine daily exhibited significant associations with elevated heart rate (100/min) and blood pressure ($> 140/90$ mm Hg) after 5 minutes of rest following the test with the p values of < 0.01 and < 0.05 respectively.

Conclusion: Long-term daily intake of high levels of caffeine ($> 400\text{mg}$) was observed to notably impact the autonomic nervous system and hinder the post-test recovery of heart rate and blood pressure mediated by the parasympathetic system. This prolonged higher consumption of caffeine may increase the susceptibility of otherwise healthy individuals to cardiovascular diseases.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 45
Category: Prevention and Health Promotion
Title: OPTIMIZING ANTIHYPERTENSIVE TREATMENT: EFFICACY OF SINGLE VERSUS MULTIDRUG THERAPY IN REDUCTION OF POOR OUTCOMES
Author Block: Nency Kagathara, Jugal Bhatt, Meenakshi Shah, Maurya Joshi, Kahan S. Mehta, Rushit Zalavadiya, GMERS Medical College and Hospital, Vadodara, India

Abstract Body:

Background: This study compares the efficacy of single-drug therapy versus multidrug therapy in managing hypertension while examining their respective roles in preventing complications associated with the condition.

Methods: Our study included patients aged 18 and above, who had a history of hypertension and were on oral medication. The patients were categorized based on whether they were undergoing treatment with a single drug or multiple drugs and a formal examination was performed to assess hypertensive complications. Later, the association of individual hypertensive complications with single versus multidrug therapy was assessed using SPSS to perform the Chi-square test.

Results: This study involved 131 participants, with a majority of participants being males (59.54%), addicted to either smoking, tobacco, or alcohol (58%), and from lower-middle socioeconomic status (66.41%). Considering lifestyle habits, less than 3 out of 10 reported engaging in physical exercise. The study revealed that in the case of any of the complications being present, there is a stronger correlation with patients who are undergoing single-drug therapy, as indicated by a p-value of 0.0084. Additionally, the occurrence of IHD/heart failure was also notably linked to single-drug therapy, supported by a p-value of 0.034. Furthermore, the investigation demonstrated that patients undergoing multi-drug therapy exhibited a significant association with a lower incidence of complications among hypertensive patients ($p < 0.05$).

Conclusion: Our study found a stronger correlation between single-drug therapy and the incidence of at least one hypertensive complication ($p < 0.01$), notably ischemic heart disease/heart failure as an individual complication, while multidrug therapy showed a significant association with a lower incidence of complications ($p < 0.05$), suggesting its efficacy in prevention.

Session Title: **Saturday Afternoon Poster Session**
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm
Poster Board Number: 46
Category: Prevention and Health Promotion

Title: ASSESSMENT OF KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARDS CARDIOVASCULAR DISEASES IN THE TYPE 2 DIABETIC AND HYPERTENSIVE POPULATION

Author Block: Jugal Bhatt, Nancy Kagathara, Samprada Tank, Jimmy Kagathara, Kahan S. Mehta, Maurya Joshi, GMERS Medical College and Hospital, Vadodara, India

Abstract Body:

Background: Cardiovascular diseases (CVDs) stand as the leading cause of mortality among individuals with type 2 diabetes mellitus (T2DM) and hypertension (HTN). The aim of this study is to evaluate the knowledge, attitude, and practices concerning CVDs within the demographic of patients with T2DM and HTN.

Methods: Our study included participants with either HTN, T2DM, or both. We collected data which included sociodemographics, and a 25-item questionnaire form which was used to assess knowledge, positive attitude, and healthy practices (KAP) towards CVDs. Further, KAP scores were categorized into poor, average, and good. Data were analyzed using descriptive statistics and the Chi-square test.

Results: Our study comprised 316 participants, predominantly males (61.4%) and individuals aged between 40 and 60 years (43.35%). Overall, participants demonstrated average knowledge and a positive attitude, yet their practices were poor. Urban residents ($p < 0.05$) and those with higher education levels ($p < 0.01$) exhibited significantly better knowledge. Similarly, higher education ($p < 0.05$) correlated significantly with a positive attitude. Female participants ($p < 0.05$) and those over 40 years of age ($p < 0.05$) showed significantly better practices. Regarding the relationship with T2DM and HTN, superior knowledge and good practices were significantly linked with individuals diagnosed with both conditions ($p < 0.05$) simultaneously.

Conclusion: With an overall limited knowledge, attitude, and practice towards CVDs, the T2DM and HTN population needs targeted local level campaigns about CVDs. These community level campaigns should especially target affected youth population, individuals residing in rural areas and with poor literacy status. This will reduce the incidence and progression of CVDs, and alleviate the cardiovascular complications of HTN and type T2DM.

Session Title: Saturday Afternoon Poster Session
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 48

Category: Valvular Heart Disease

Title: IT'S NOT JUST DIARRHEA... AN INTERESTING CASE OF CARCINOID HEART
Sahaya Francis Akiston, Ravichandran Edwin, Balachandran Chidambaram, Thirulogachandar Elayaperumal, Manikandan Senthur pandiyan, Viswanathan Thangavelu, Selvakumaran Sankarapandian, Anto Prabhu Rosary, TIRUNELVELI MEDICAL COLLEGE HOSPITAL, TIRUNELVELI, India

Author Block:

Background: Carcinoid syndrome is a rare disease caused by neuro endocrine tumors. The characteristic triad of carcinoid syndrome are cutaneous flushing, diarrhea and bronchospasm is due to the vasoactive substances that enters the systemic circulation. When it progresses to involve cardiac system it leads to carcinoid heart disease

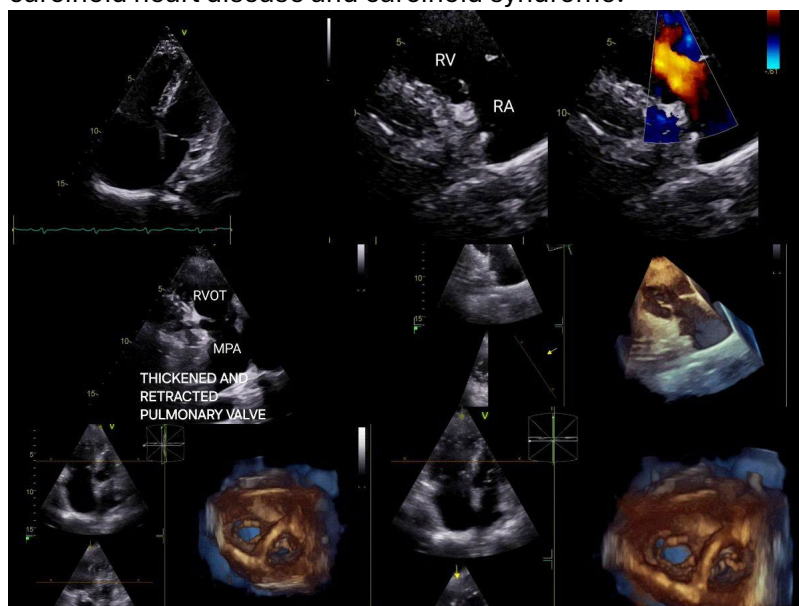
Case: 56 years old female with complaints of progressive increase in bowel movements with dyspnea for the past 2 months . She was planned to undergo colonoscopy and cardiac evaluation was sought for evaluation of shortness of breath . Her physical examination revealed pansystolic murmur over tricuspid area. TTE showed retracted and thickened tricuspid and pulmonary valves with restricted mobility during both opening and closure suggestive of tricuspid and pulmonary regurgitation and stenosis .

Decision-making: Echo features when integrated with the patient history and the physical findings, indicated a high probability of a carcinoid tumor. CECT abdomen showed multiple well defined soft tissue lesions in ileocaecal junction and in liver. Blood investigations showed NT PRO BNP - 670pg/mL, and 5-hydroxy-indolacetic acid >65mg/24 h and chromogranin A - 722 µg/L which confirmed the diagnosis of carcinoid syndrome.

Conclusion: Carcinoid heart disease though rare represents one of the causes of tricuspid regurgitation and right heart dysfunction .

Abstract Body:

Echocardiography can be a valuable tool for helping to make a diagnosis of carcinoid heart disease and carcinoid syndrome.



Session Title: Saturday Afternoon Poster Session
Session Time: Saturday, August 17, 2024, 3:20 pm - 3:50 pm

Poster Board Number: 50

Category: Valvular Heart Disease

Title: FROM SURGICAL TO TRANSCATHETER VALVES -NAVIGATING LATE COMPLICATIONS IN A RHEUMATIC VALVULAR HEART DISEASE PATIENT

Author Block: VINOD NAYANEGALI, John Jose, Paul V. George, Jesu Krupa S, Christian Medical College, Vellore, India

Background: Exemplifies longitudinal course, recurring complications of multi-valvular disease over decades. Highlights multimodality imaging role.

Case: 56 year male with rheumatic heart disease post double valve replacement presented with breathlessness. Echocardiography revealed severe tricuspid regurgitation.

Decision-making: Patient underwent transcatheter bicaval valve implantation using the TRIC system. Dyspnea worsened later. Imaging revealed moderate paravalvular mitral leak. Percutaneous closure attempted but unsuccessful.

Conclusion: Case reflects need for surveillance, multidisciplinary approach, procedural timing in managing valvular disease. Multimodality imaging integration critical . As transcatheter therapies evolve, managing late complications is key

Abstract Body:

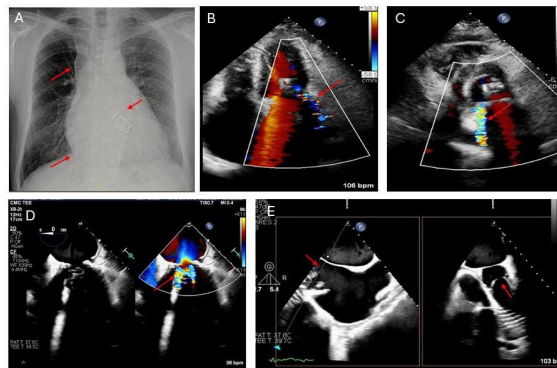


Figure 1: A. chest X-ray showing implanted Starr-Edwards valve at mitral and aortic positions. TRIC valve in SVC and IVC. TTE Images showing PVL in A4C (B) and PSAX (C) views. E. TRIC Valve. D. TEE showing PVL 8° clockwise. E. Biplane imaging during TEE showing TRIC Valve in SVC and IVC.

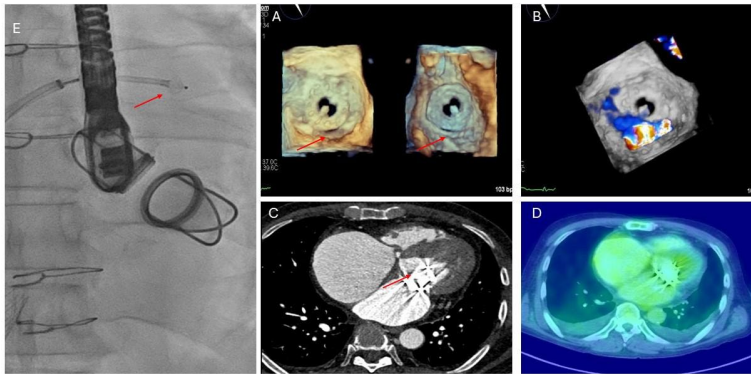


Figure 2: A. 3D TEE showing paravalvular defects. B. With color flow. C. Cardiac CT is used for assessment of the mitral prosthesis. D. PET CT image is showing no uptake on the mitral prosthesis, ruling out IE. E. Fluoroscopic image showing attempted PV leak closure with AVP II device under TEE guidance

Session Title: Challenging Clinical Cases in Electrophysiology

Session Time: Saturday, August 17, 2024, 3:50 pm - 4:40 pm

Presentation Number: 27-05

Category: Electrophysiology

Title: PREMATURE ATRIAL CONTRACTIONS THAT MASQUERADE AS PVCs AND ATRIOVENTRICULAR BLOCK

Author Block: Yasmin Mohtasham Kia, Ali Bozorgi, Iran University of Medical Sciences, Tehran, Iran (Islamic Republic of), Tehran Heart Center, Tehran, Iran (Islamic Republic of)

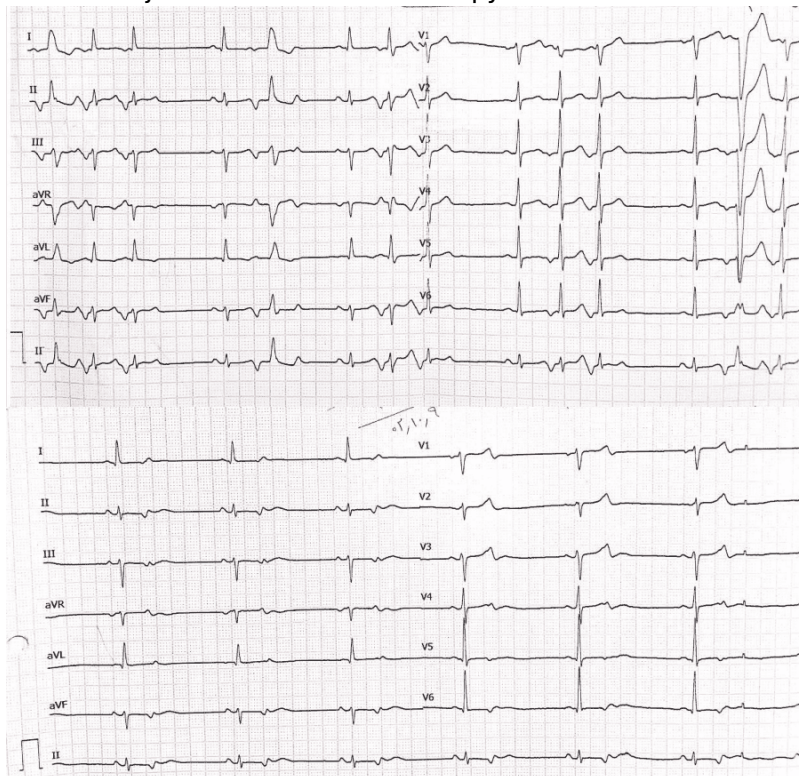
Background: Premature atrial contractions (PACs) occurring with AV block or aberrant conduction can present a challenging diagnosis for physicians, impacting their approach to a proper management.

Case: A middle-aged man complaining of palpitations was referred to an electrophysiology clinic for ECG Holter monitoring, reported atrial tachycardia and frequent premature ventricular contractions (PVCs) (27%). Below are his two ECGs included for review.

Decision-making: His initial ECG indicated bigeminal PAC with AV block and the later ECG showed atrial tachycardia with aberrant AV conduction with left bundle branch block, mimicking a PVC. So, there is no need for PVC ablation or pacemaker implantation. Radiofrequency ablation was effectively carried out within the coronary sinus to ablate the atrial tachycardia, which resulted in sinus rhythm without extra systoles.

Conclusion: Occurrence of aberrancy can make a PAC resemble a PVC. Furthermore, a PAC with AV block could be misinterpreted as AV block 2:1 by a non-expert physician. Differential diagnosis of non-conducted P waves includes blocked PAC, second-degree AV block, and concealed junctional/fascicular ectopy.

Abstract Body:



Session Title: Challenging Clinical Cases in Electrophysiology

Session Time: Saturday, August 17, 2024, 3:50 pm - 4:40 pm

Presentation Number: 27-07

Category: Electrophysiology

Title: CHALLENGES IN ABLATION OF UNCOMMON ATRIOVENTRICULAR CONNECTIONS IN WOLFF-PARKINSON-WHITE SYNDROME

Author Block: Devendra Singh Bisht, Kamal Kishor, MH & HI, Chandigarh, India

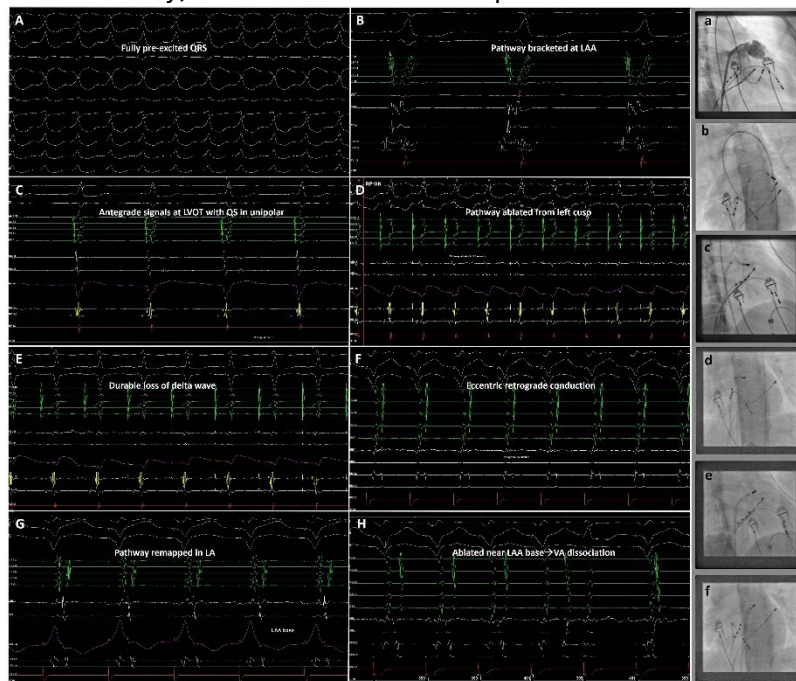
Background: Most accessory pathways traverse the atrioventricular (AV) annulus at an oblique angle; most ablation failures result from failure to appreciate this oblique course and abolish both the antegrade and the retrograde conduction.

Case: A 27-year-old female diagnosed with WPW syndrome was taken for an electrophysiological study. Left atrial (LA) mapping bracketed the pathway near the left appendage (LAA) and unmasked a slant connection to the left ventricular (LV) outflow tract. A decision was made to ablate near the LV end of the unusual AV connection. The pathway was localised near the Left Fibrous Trigone fluoroscopically, and the left cusp was used as a vantage point for power delivery. Despite the successful elimination of antegrade conduction, as demonstrated by the absence of delta, retrograde conduction persisted.

Decision-making: The retrograde conduction was mapped in the LA, and ablation was performed near the LAA base, eliminating the retrograde limb.

Conclusion: Post successful ablation, retrograde concealed conduction may persist due to an incomplete lesion (creating a unidirectional functional block) or the presence of multiple pathways. Our patient exhibits AV connections at unusual sites, necessitating ablation at both atrial and ventricular ends to eradicate both conduction types. Kent bundles, except for the septal ones, are always on the epicardial aspect. Since ablation is performed endocardially, it can result in an incomplete lesion and create a functional block.

Abstract Body:



Session Title: **Challenging Clinical Cases in Electrophysiology**

Session Time: Saturday, August 17, 2024, 3:50 pm - 4:40 pm

Presentation Number: 27-09

Category: Electrophysiology

Title: NOVEL TECHNIQUE OF TRANSVENOUS LEAD EXTRACTION USING A BIOPTOME AND SNARE

Author Block: CHANDAN SHARMA, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI, India

Background: 44 years old male post DDDR- SJM for complete heart block and post pulse generator replacement (March 2022)

Case: The patient presented with CIED infection in September 2023 with PET-CT showing diffusely increased FDG uptake noted around CIED pocket and leads. We decided for pulse generator and lead extraction with surgery backup after temporary pacemaker insertion alongwith intravenous antibiotics course as per guideline directed management.

Decision-making: We employed novel techniques in this case for successful lead extraction using a bioptome and snare. Firstly, we used a carotid shuttle sheath fashioning to bevel-shape as make-shift dilator to dissect and free the leads of adhesion when we faced difficulty to advance the rotating cutting sheath. Secondly, we used a 5.5F bioptome which was taken inside tightrail sheath to hold the distal RV lead tip which helped in dislodging RV lead tip and we could snare it easily and thereby it is a potential technique to extract tightly adhered lead tips. Thirdly, we used Seque snare and threaded it through the tightrail sheath. The snaring technique of lead extraction is traditionally described using

Abstract Body: femoral or less commonly internal juglar approach and it involves snaring the distal free end of the lead or lead body directly, while in our case, we threaded the snare through the tightrail sheath and snared the distal end of RV lead within the tightrail sheath through our single access without using additional femoral or juglar approach. Use of femoral approach has been described as predictor of higher rate of procedure related major complications and clinical failure in ELECTRa registry data. This innovative use of snare through tightrail in our case helped in achieving lead extraction through single access approach.

Conclusion: We have to innovate to be successful in challenging lead extraction cases. This case was extremely challenging because of long duration of implanted leads (15years) and tined leads. Use of bioptome and snare through the tightrail lumen without using femoral or juglar approach were used as novel innovative methods for lead extraction in this case and have not been described before in literature.

Session Title: Ischemic Heart Disease Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 3:50 pm - 4:40 pm

Presentation Number: 26-05

Category: Ischemic Heart Disease

Title: VASCULAR REGENERATIVE CELL DEFICIENCIES IN SOUTH ASIAN ADULTS

Author Block: [Aishwarya Krishnaraj](#), Ehab Bakbak, Hwee Teoh, Yi Pan, Adrian Quan, David Hess, Subodh Verma, St Michael's Hospital, Toronto, Canada, University of Toronto, Toronto, Canada

Background: Cumulative evidence indicates that individuals of South Asian ethnicity are at a higher risk of developing type 2 diabetes (T2D) and cardiovascular (CV) disease compared to age-, sex- and risk factor-matched white Europeans. We have previously demonstrated that individuals with T2D and obesity exhibit vascular regenerative (VR) cell depletion, defined as the depletion of circulating progenitor cells that play a crucial role in coordinating blood vessel repair. We hypothesize that this VR cell depletion contributes in part to the heightened CV risk documented in people of South Asian ethnicity.

Methods: A total of 60 South Asian and 60 white European adults with either documented CV disease or established diabetes with ≥ 1 other CV risk factor were enrolled in the study. VR cells were isolated and enumerated from peripheral blood samples using a flow cytometry assay based on high aldehyde dehydrogenase (ALDH^{hi}) activity and lineage-specific cell surface markers expression. The primary outcome was the difference in the frequency of circulating ALDH^{hi} progenitor cells, monocytes, and granulocytes between South Asian and white European individuals.

Results: Compared with white European participants, those of South Asian ethnicity were younger (69 ± 10 years vs 66 ± 9 years; $P < 0.05$), had lower weight (88 ± 19 kg vs 75 ± 13 kg; $P < 0.001$), and exhibited a greater prevalence of T2D (62% vs 92%). South Asian individuals had markedly lower circulating frequencies of pro-angiogenic ALDH^{hi}SSC^{low}CD133⁺ progenitor cells ($P < 0.001$) and ALDH^{hi}SSC^{mid}CD14⁺CD163⁺ monocytes with vessel-reparative capacity ($P < 0.001$), as well as proportionally more ALDH^{hi} progenitor cells with high reactive oxygen species content ($P < 0.05$). After correction for sex, age, body mass index, and glycated hemoglobin, South Asian ethnicity was independently associated with lower ALDH^{hi}SSC^{low}CD133⁺ cell count.

Conclusion: South Asian people with established CV disease and/or T2D had less vascular regenerative and reparative cell content suggesting a compromised capacity for blood vessel repair which ultimately, may contribute to the excess vascular risk in this population.

(NCT05253521)

Abstract Body:

Session Title: Ischemic Heart Disease Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 3:50 pm - 4:40 pm

Presentation Number: 26-07

Category: Ischemic Heart Disease

Title: APP BASED PREDICTION OF ACUTE CORONARY SYNDROME BY USING ARTIFICIAL INTELLIGENCE

Author Block: Subhashis Dey, DEBABRATA ROY, Navanil Biswas, Kaushik Manna, SAIYED RANA, Abhishek Roy, Arnab Banerjee, Arijit Das, Narayana Health- Rabindranath Tagore International Institute of cardiac sciences, Kolkata, India

Background: During COVID pandemic, due to human resource constraints, emergency services were overburdened with chest pain patients, many of whom ultimately proved to be non-cardiac, whereas due to fear of infection, deserving patients avoided hospital and diagnosis of ACS was delayed. Thus, a home detection system of troponin (most reliable cardiac biomarker), operable by the patient himself during an episode of chest pain would help to solve this dilemma.

Methods: 1000 Trop-T test results were labelled as per patient profile and used to train the model algorithm (STAT ACS app). 144 randomly selected chest pain patients underwent initial clinical evaluation and investigations, Trop T kit test was done using finger prick blood which was evaluated by the app. High sensitivity Troponin I (hs Tn-I) was done in central lab. Syntax Score was calculated from coronary angiogram. History, risk factors and Trop T result were scored by the app to predict the probability of ACS and its accuracy was compared with echocardiography and hsTn-I results as well as Syntax score on coronary angiography. Statistical analysis was done using Pearson's Chi Square test, Pearson's Correlation Coefficient, Spearman's Rank Correlation Coefficient and ROC curve analysis.

Results: There was a strong agreement between physician's interpretation and app's interpretation of Trop T result (kappa value- 0.902; p value- 0.001). When compared with hs-Tn I results, app's interpretation of Trop T had good sensitivity (90.16%) and specificity (100%). App's interpretation of Trop T had good sensitivity (90.08%) and specificity (95.65%) when compared with coronary angiography results. App risk score > 3 showed fair sensitivity (76.86%) and specificity (78.26%) when compared with coronary angiography in predicting ACS. There was mild correlation of app risk score and Syntax score (r-0.43, p value <0.05).

Conclusion: The mobile based app (STAT ACS) by integrating Trop T kit results and some clinical factors can predict clinically significant ACS in patients with chest pain at home without involving any medical setup and/or skilled personnel. App's interpretation of Trop T kit test correlated well with hs-Trop I result measured in the lab.

Abstract Body:

Session Title: Ischemic Heart Disease Oral Abstract Presentations

Session Time: Saturday, August 17, 2024, 3:50 pm - 4:40 pm

Presentation Number: 26-09

Category: Ischemic Heart Disease

Title: EXPLANT OF INFECTED CORONARY STENTS AND REVASCULARISATION: HOW WE TACKLED NIGHTMARES!

Author Block: Dhanesh KUMAR, Naresh Trehan, VIJAY KOHLI, Surinder Bazaz, Sanjeev Singla, Sanjeev Chandna, Yatin Mehta, MEDANTA-THE MEDICITY, GURUGRAM, India

Background: : Coronary artery stent (CAS) infection is a rare and life-threatening complication that can occur in up to 0.1% of cases after stenting. It can occur with both bare metal and drug eluting stents though more common in bare metal stents. Infection of mitral, tricuspid, and aortic valves (?Infective endocarditis), COVID-19 infection, poor diabetic control, and lack of sterile precautions can be a risk factor for the development of CAS.

Methods: We encountered 10 such cases between 2020- March 2024 with varied presentations. Patients presented with fever, chest pain, signs & symptoms of cardiogenic and septic shock. Initially, all patients were treated with antibiotics, and after a complete evaluation by CT-Coronary, coronary angiography, and 2D-Echo, taken for explanation and revascularization.

Abstract Body: Results: Early presentation (<1yr) is more common in our series compared to late presentations (>1yr). Most cases (40%) came from peripheral centers lacking advanced cardiac care. Staphylococcus aureus infection was most common and present in 30% (3/10)of cases. 3/10 cases (30%) had a history of COVID-19 infection. Revascularization was possible in 8/10 cases (80%) and in 2/10 (20%) cases drainage of pus pocket, stent removal, and washing with antibiotics was done as there was no graftable spot left. 2/10 (20 %) of cases required multiple stent removal. All patients remained stable in the perioperative period and the mean discharge period after surgery was 7 days.

Conclusion: The surgical extraction of infected coronary artery stents is a complex but life-saving procedure. The risks & benefits, and type of surgery of surgery should be customized carefully for each patient individually.

Session Title: Challenging Clinical Cases in Heart Failure and Cardiomyopathies

Session Time: Sunday, August 18, 2024, 9:00 am - 9:50 am

Presentation Number: 33-05

Category: Heart Failure and Cardiomyopathies

Title: AN UNIQUE CASE OF LEFT VENTRICULAR OUTFLOW OBSTRUCTION

Author Block: Shaheer Ahmed, Enosh Katta, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

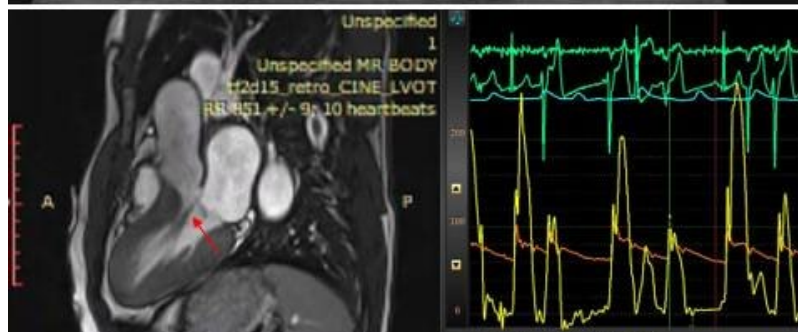
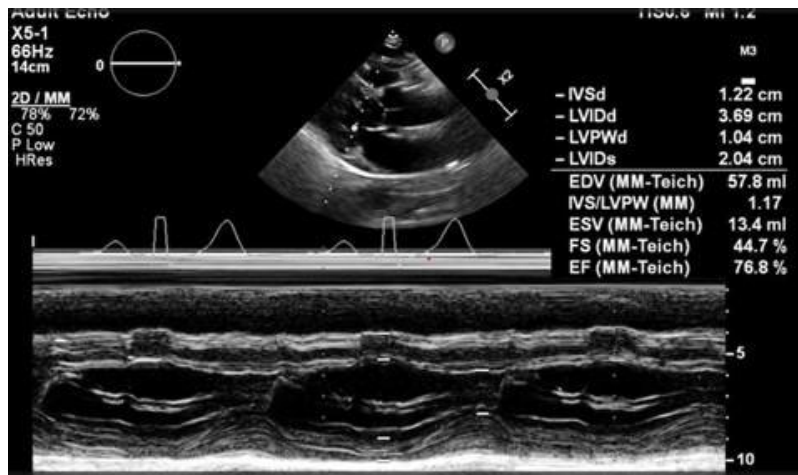
Background: Hypertrophic obstructive cardiomyopathy phenotype is a spectrum of disorders with a variety of presentations

Case: A man in his 50s presented with dyspnea for six months, exertional giddiness/syncope for two months and angina on exertion for one month. He was diagnosed elsewhere as HOCM and was referred for septal reduction therapy. Echocardiography revealed turbulence across LVOT with a gradient of 19 mmHg at rest and 75 mmHg on standing. There was no LVH or systolic anterior motion of the mitral valve.

Decision-making: TEE revealed normal length of anterior and posterior mitral leaflets. A cardiac MRI was done, which revealed an accessory papillary muscle with insertion into the base of the anterior mitral leaflet, which was causing LVOTO. Although the basal septum was relatively thicker than other myocardial segments, it still did not reach the threshold for LVH. Left ventricular function was supranormal with ejection fraction of 75%. A genetic study revealed BAG3(+) Exon 4 mutation, a gene which is usually associated with DCM, presenting with an HCM phenotype is quite rare. In this case, accessory papillary muscle with anomalous insertion into the base of the anterior mitral leaflet, along with hypercontractile left ventricle, led to dynamic LVOTO. On Metoprolol symptoms improved and gradient reduced

Abstract Body:

Conclusion: This case highlights that not all cases with dynamic LVOTO are not HOCM and other pathologies should be looked into as they have severe implications in patient management.



Session Title: Challenging Clinical Cases in Heart Failure and Cardiomyopathies

Session Time: Sunday, August 18, 2024, 9:00 am - 9:50 am

Presentation Number: 33-07

Category: Heart Failure and Cardiomyopathies

Title: LIGHT AT THE END OF THE TUNNEL: A INTERESTING CASE OF A PATIENT PRESENTING WITH CHEST PAIN

Author Block: Shaheer Ahmed, Enosh Katta, Rajesh Nachiappa Ganesh, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

Background: Cardiac sarcoidosis tends to present with a myriad of presentations. A high index of suspicion is required in diagnosing inflammatory cardiomyopathy, especially when the presentation is atypical

Case: A male in his 30s presented with chest pain to the emergency department. He has had recurrent palpitations for the past six months. Four years prior, for palpitations, an ECG was done, and he was told to have some heart block and no further treatment was required. He was thrombolysed by the emergency medicine team with an assumption of new-onset RBBB and was referred to cardiology for further management. Echocardiography showed normal left ventricular function. However, RVOT had mild dilatation. On the focused right ventricle view, there was isolated RV apical akinesia distal to the moderator band.

Decision-making: Differential diagnoses were ARVC, cardiac sarcoidosis, pulmonary embolism, isolated RV myocardial infarction and RV cardiomyopathy. ESR and CRP were elevated. His cardiac MRI showed RV apical and distal RV-free wall akinesia without LGE/fatty infiltration. CT pulmonary angiogram was normal. Cardiac PET revealed diffuse uptake in the basal septal and lateral walls with focal uptake in the basal anteroseptal segment of LV. EM biopsy revealed lymphocytic infiltration with areas of fibrosis, suggestive of chronic active myocarditis. GeneXpert of the endomyocardial biopsy was negative for Mycobacterium Tuberculosis. Strain imaging revealed a reduced GLS in the infero-septal region. 24-hour Holter done because of palpitations revealed APCs and a review of previous records showed an ECG with supraventricular tachycardia. Based on all the above findings, a diagnosis of cardiac sarcoidosis was made and was started on oral steroids. On follow-up, global longitudinal strain normalised. A cardiac PET scan done at three months showed persistent uptake; hence, methotrexate was also added.

Abstract Body: **Conclusion:** This case highlights the need for detailed echocardiographic evaluation in patients presenting with chest pain. In our case, finding an abnormality in the apical part of the RV (end of the tunnel), which is often a neglected area, gave an appropriate diagnosis.

Session Title: Challenging Clinical Cases in Heart Failure and Cardiomyopathies

Session Time: Sunday, August 18, 2024, 9:00 am - 9:50 am

Presentation Number: 33-09

Category: Heart Failure and Cardiomyopathies

Title: RESOLUTION OF CORONARY ARTERY ANEURYSMS FOLLOWING IMMUNOMODULATORY THERAPY IN POLYARTERITIS NODOSA

Author Block: Abraham Paul, Rajiv Chandran, Joe Thomas, Aster Medcity, Ernakulam, India

Background: Cardiac presentations of Poly Arteritis Nodosa (PAN) include angina, heart failure, or acute coronary syndromes. We present a case of a young lady who showed improvement in cardiac manifestation with immune therapy

Case: A 20yr old woman presented with angina. She was under treatment as systemic lupus erythematosus. Baseline ECHO showed severe LV systolic dysfunction. Coronary angiogram revealed multiple aneurysms and stenosis throughout the coronaries. Further evaluation finalized a diagnosis of PAN, and was started on targeted therapy, along with cardiac medicines.

Decision-making: Coronary angioplasty or coronary artery bypass grafting have yielded mixed results in PAN with rapid neointimal growth in stents and failure of vascular grafts. Because of the diffuse nature of her disease, a decision for medical management was reached. Her symptoms showed remarkable improvement over 6 months with follow up echocardiography showing improved LV systolic function and complete resolution of angina. A follow up coronary angiogram showed complete resolution of aneurysms.

Abstract Body:

Conclusion: We report possibly the first case of near complete normalization of coronary stenosis and aneurysms with immune therapy for PAN. The absence of conventional risk factors could have contributed to this resolution. Thus, in this specific subset of patients, proper targeted therapy for PAN could prove to be a viable alternative to more invasive cardiac interventions, in the absence of acute coronary syndromes.



Session Title: **Multimodality Imaging and Valvular Heart Disease Oral Abstract Presentations**

Session Time: Sunday, August 18, 2024, 9:00 am - 9:50 am

Presentation Number: 32-05

Category: Valvular Heart Disease

Title: A NOVEL AI - DERIVED FORWARD-VALIDATED PREDICTION SCORE ("BASE- BALLOON SUCCESS EVALUATION SCORE) FOR OUTCOMES IN BALLOON MITRAL VALVOTOMY- LOOKING BEYOND THE WILKINS'

Author Block: Prayaag Kini, Reeta Varyani, SRI SATHYA SAI INSTITUTE OF HIGHER MEDICAL SCIENCES, Bengaluru, India

Background: Traditionally Wilkins score, Nobuyoshi and Cormier scores have been used in BMV for predicting success. These ignore prevalent rhythm, degree of PAH, balloon sizing strategy and degree of IAS bulge that could compositely and significantly contribute to BMV success.

Methods: Data from 2625 patients (Males=1390) undergoing BMV was analysed and parameters studied for "success" of BMV and occurrence of post-BMV regurgitation. Predictors of success and post -BMV significant MR were determined **using both**

Multivariate regression and Machine learning. A composite score was generated and prospectively applied to 450 patients for determining real-world accuracy.

Results: SEVEN predictors of success were determined by stepwise logistic regression and weighted as per their strength of association to create a prediction model. We categorised SIX as Binary variates: LA diameter > 55 mm with IAS septal bulge > 25 mm from midline:1, without the same as 2; Mobile leaflets in diastole as 2: lack of mobility as 1; Severe subvalve disease upto leaflet tip as 1, without as 2; ICDS v/s HBBS as 2 and 1 respectively, Rhythm: AF :0, SR:2 and RV systolic pressure for PAH: 0 if RVSP>70 mm, 2 if <70 mm Hg.

Abstract Body:

Bicommissural fusion was graded as continuous variable: Both commissures fused without calcium:0, Partial fusion:1, commissural calcium nodule: 2. Of total score of 14, there was linear increase in immediate BMV success as the score increased in tertiles of < 7, 8-10 and > / =11. We used Precision-Recall curves for forward Validation analysis in 450 patients. The score could predict successful BMV outcomes (77% chance of success) as well as showed good prediction of MR: 86% accuracy in last tertile compared with only 21% patients in first (p < 0.001). It improvised upon Wilkins score in that in patients with Wilkins score >8, BASE score > 11 predicted BOTH positive and negative outcomes. This aspect is NOT COVERED by any existing score in literature.

Conclusion: Our clinical + echo-based score improvises upon current scores for successful BMV outcomes, ALONG WITH additionally good predictability of post - BMV possibility of MR. **This is the first such score in rheumatic MS patients undergoing BMV in world literature.**

Session Title: **Multimodality Imaging and Valvular Heart Disease Oral Abstract Presentations**

Session Time: Sunday, August 18, 2024, 9:00 am - 9:50 am

Presentation Number: 32-07

Category: Multimodality Imaging

Title: INCREMENTAL VALUE OF RV STRAIN ANALYSIS FOR DETECTING SUBCLINICAL RV DYSFUNCTION IN PATIENTS OPERATED FOR TETRALOGY OF FALLOT TO GUIDE PULMONARY VALVE INTERVENTIONS

Author Block: Prayaag Kini, Reeta Varyani, SRI SATHYA SAI INSTITUTE OF HIGHER MEDICAL SCIENCES, Bengaluru, India

Background: Deterioration in RV function post-operatively after intra cardiac repair (ICR) in TOF patients especially with trans annular patch repair (TAP) on follow-up has been attributed to persisting pulmonary regurgitation leading to progressive RV dysfunction, exercise intolerance, eventually culminating in right heart failure and even SCD. Currently RV volumes on follow up CMRI form the primary basis of guiding future pulmonary valve (PV) implantations.

Methods: 65 adolescent asymptomatic operated TOF patients and 60 matched cohort of healthy controls were included. Along with standard echo protocol, LV-GLS and RV-GLS were assessed (using AFI) and Color TDI tracings obtained at the septal and lateral mitral annular segments in the Ap4-chamber view. Mean of e' velocity measured (septal and lateral) was used to calculate E/e'. RV FAC, RVEF, RVEDVI, RV/LV EDVI ratio and degree of PR were compared with concomitant CMRI-derived values (current "gold standard")

Results: Although traditionally measured RVEF and RV FAC were not significantly different,

Abstract Body: RV strain by both AFI and TDI values were **significantly lower** in Post ICR arm (**-14.1 ± 2.7 v/s $-21.5 \pm 4.5\%$** , $p=0.007$) particularly in segments of RV free wall ($-12.5 \pm 3\%$). By AUROC analysis, RV GLS value of -15% (79% Sens, 82% Sp) in identifying CMRI-RVEF < 45% (AUC: 0.85, $p < .001$). **RV-GLS and segmental RV free wall strain deterioration showed linear correlation with time from surgery beginning as early as 16 months, and with degree of pulmonary regurgitation at much lower values of RVEDVI than currently recommended for intervention for PV replacement.** On regression analysis, decrease in free wall RV-GLS correlated well with **wider QRS, worse RV indices and even lower LV-GLS correlated with higher degree of PR** (Pearson's $r: 0.81$), particularly in patients undergoing transannular patch (TAP) repair v/s no TAP.

Conclusion: Interestingly, RV dysfunction occurred with RV strain deteriorating at **MUCH LOWER values of (CMRI-derived) RV EDV** than currently recommended for PV re-implantation as per guidelines. This **underscores the routine use of RV Strain analysis** during follow up of operated TOF patients to detect subclinical RV and LV dysfunction.

Session Title: Multimodality Imaging and Valvular Heart Disease Oral Abstract Presentations

Session Time: Sunday, August 18, 2024, 9:00 am - 9:50 am

Presentation Number: 32-09

Category: Multimodality Imaging

Title: FLUOROSCOPIC LANDMARKS IN IVUS GUIDED ABSOLUTE ZERO CONTRAST PCI:A SINGLE CENTRE EXPERIENCE

Author Block: Pankaj Banotra, Uday Khanolkar, Bijay K. Mahala, Devi P. Shetty, Narayana institute of cardiac sciences, Bangalore, India

Background: Contrast induced nephropathy is the third most common cause of renal insufficiency following percutaneous coronary angioplasty(PCI)and patients with preexisting renal dysfunction are even at a higher risk for poor outcomes. With the advent of intravascular imaging, safety and efficacy of angioplasty can be improved significantly in these patients.

Methods: This observational prospective study included total of 72 consecutive patients with chronic kidney disease ($eGFR \leq 45\text{ml/min/m}^2$)and established obstructive coronary artery disease who underwent absolute zero contrast PCI at a single tertiary centre. PCI was planned in patients with significant stenosis and indications for revascularization.All Procedures were performed under dry fluoroscopy and IVUS guidance without use of contrast.Informed consent,clinical,procedural and follow up data was collected and analyzed.

Abstract Body: **Results:** A total of 72 patients (90 vessels)with mean age of the 62.46 ± 10.15 years with male predominance (83.3%) underwent zero contrast PCI.Mean Left ventricular ejection fraction of patients by Echocardiography was $(43.95 \pm 8.8 \%)$.Mean serum creatinine and estimated glomerular filtration rate (eGFR) of patients were $2.27 \pm 1.03 \text{ mg/dl}$ and $31.76 \pm 8.20\text{ml/min/1.73m}^2$ respectively. Procedure was performed by Femoral(45.8%) and radial (54.2%)route.Total 11 patients(15.3%) underwent left main stenting.Fluoroscopic landmarks such as side-branch wiring (70.8%),floating wire in aorta(22.2%),calcifications(20.8%), bony landmarks such as ribs or vertebrae (45.8%) and Sternal wires/clips(8.3%) were used in addition to IVUS to enable more accurate placement of stent.Technical and procedural success were achieved in 91.2 % and 97% of patients.One patient died in hospital due to non-cardiac cause and one patient required hemodialysis.Post procedure at 48 hours ,there was no deterioration of renal function.On 3 months followup, there was no significant major adverse cardiovascular events (MACE).

Conclusion: With the help of fluoroscopy landmarks and intravascular imaging ,zero contrast PCI can be performed safely with good clinical outcomes in patients who are at high risk of nephropathy.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 2

Category: Heart Failure and Cardiomyopathies

Title: THE EFFECT OF SEMIFOWLER 30 RIGHT LATERAL ON CARDIAC OUTPUT AMONG ACUTE HEART FAILURE PATIENTS: A CROSSOVER CLINICAL TRIAL
Ryan Budiyanto, Ferdita Nurwantisari, Muhamad adam, Ayu Dikha, National Cardiovascular center Harapan Kita, Jakarta, Indonesia, University of Indonesia, Depok

Author Block:

Abstract Body:

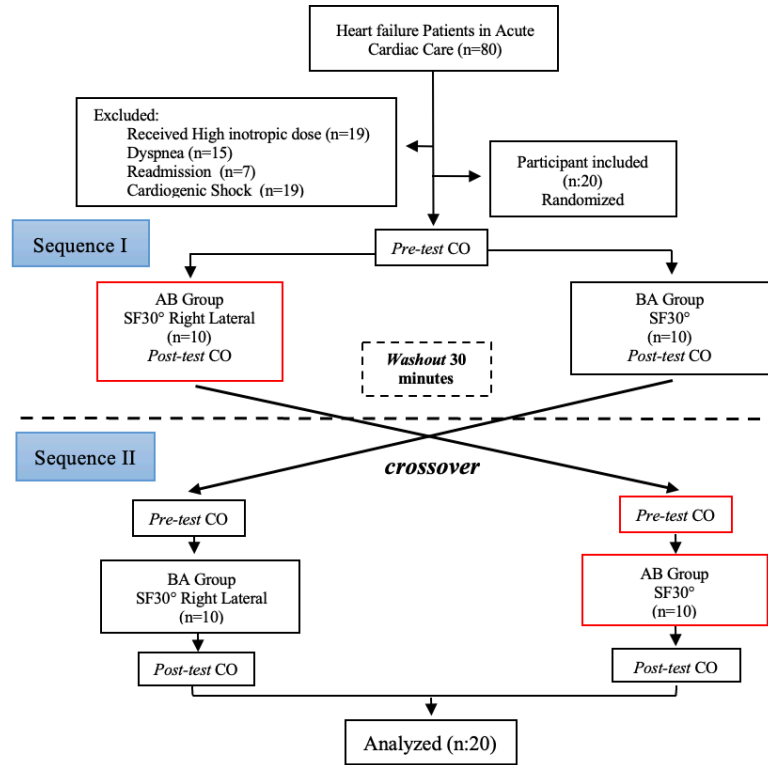
Background: Right lateral 30 semifowler body position considered as a self-protective in acute heart failure patients that has positive effect on hemodynamic and symptoms relieve, but the impact on cardiac output and other parameter are not well-known yet.

Methods: a randomized crossover trial on 20 acute heart failure subjects. Hemodynamic parameter were measure during pre-post test using LiDCO CNAP. Intervention group received Semifowler 30 right lateral in 10 minutes and control group receive conventional therapy. SPSS 26 and NCSS software were used to analysis carryover effect and it's effectiveness.

Results: Subject range 26-72 years, 75% had no history of heart failure, 85% of subject had a decreased left ventricular ejection fraction (LVEF <40%). Wabsout duration of 30 minures caused no residual effect and was not statistically significant ($p>0.05$). Average stroke volume differs significantly, stroke volume variation in SF 30RL was 20.1 vs 43.4 in SF goup. Mean cardiac output in SF30RL group was 4.88 while SF group was 4.2 but not statistically significant ($p>0.05$).

Conclusion: The semifowler 30 right lateral can increase cardiac output, considered as a volume optimization strategy in a heart failure preload

dependent patients.



Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 4

Category: Heart Failure and Cardiomyopathies

Title: REMOTE MONITORING USING A SMARTPHONE OF PATIENTS WITH CHRONIC HEART FAILURE FOR 6 MONTHS.

Author Block: Anastasia Panova, Elena Zheleznykh, Aleksei Emelianov, [Maria Kozhevnikova](#), Yuri Belenkov, Elena Privalova, First Moscow State Medical University of the Ministry of Health of the Russian Federation, Moscow, Russian Federation

Background: Patients with chronic heart failure require outpatient monitoring after discharge from hospital. The ability to use a smartphone with a personal messenger can improve the prognosis and quality of life.

Methods: The study included 51 patients with HF after discharge from hospital with optimally selected therapy. The average age of the patients was 60.41 ± 13.15 years, of which 38 (75%) were men. The mean ejection fraction (EF) was $45.75 \pm 11.59\%$. HFpEF was 41%, HFrfEF was 31%, and HFmdEF was 28%, respectively. The observation period was 6 months. Remote monitoring included a daily survey received by the patient via a personal messenger, consisting of questions about blood pressure levels, heart rate, and symptoms of decompensation. Quality of life was assessed using the MLHFQ questionnaire.

Results: 39 patients completed the study. Of these, 59% filled out the questionnaire regularly, 41% filled it out irregularly, but at least once a month. 23% of patients stopped filling out the questionnaire. After 6 months of observation, 18 patients who regularly filled out the questionnaire underwent repeat echocardiography; an increase in EF was noted from $43.33 \pm 10.91\%$ to $46.56 \pm 9.94\%$. There was an increase in the quality of life in these patients, and at the beginning of observation from 32.00 ± 18.97 points to 28.36 ± 16.55 points. Two patients required treatment adjustments due to decompensation of HF and instability of blood pressure.

Conclusion: The results showed the effectiveness of medical remote monitoring of patients with HF using a smartphone. Patients' adherence to using the questionnaire in a personal messenger was 77%. There were no significant differences when comparing adherence to remote monitoring by gender. There was no relationship between adherence to completing the questionnaire using a smartphone and the severity of HF. 46% of patients in the group who regularly used the telemedicine platform maintained good self-monitoring of vital signs, were adherent to therapy, and were believed to have a better prognosis during the 6-month follow-up period.

Abstract Body:

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 5

Category: Heart Failure and Cardiomyopathies

Title: HEART TRANSPLANTATION IN A PATIENT WITH LIDDLE'S SYNDROME

Author Block: Jay Gohri, Rahul Bakhle, Avery Calhoun, Aparna Sajja, Kunal Bhatt, Emory, Atlanta, GA, USA

Abstract Body:

Background: This is the first case to our knowledge to demonstrate profound deterioration of Liddle syndrome, ultimately requiring mechanical circulatory support with VA ECMO and expedited heart transplant listing.

Case: A 29-year-old male with Liddle syndrome, presented with decompensated HF. He had a decade-long history of NICM and declining LVEF despite optimal medical and CRT-D therapy. He had CKD-4 ,previous embolic stroke and was on home milrinone therapy .Echo demonstrated severe global hypokinesia, RV dysfunction, and significant valvular regurgitation. Genetic testing in childhood confirmed Liddle syndrome.On presentation, he was volume overloaded. Labs revealed Cr 3.65 mg/dL, K+ 3.6 mEq/L, and elevated NT-proBNP 914 pg/mL. Diuresis was initiated. RHC showed elevated biventricular filling pressures and low cardiac index of 1.4 L/min/m2, consistent with cardiogenic shock. Inotropic support was maximized with dobutamine, but he continued deteriorating.He required Impella 5.5 mechanical circulatory support, initiation of dialysis, and dual-listing for urgent heart and kidney transplant as status 2. He was upgraded to status 1 after continued worsening of hemodynamics and escalation to VA-ECMO. He ultimately underwent heart transplantation, with plans for future kidney transplant after recovery.

Decision-making: Patients with Liddle syndrome are often misdiagnosed and improperly treated with ineffective antihypertensives after thiazide diuretic failure due to hypokalemia. Resistant hypertension leads to high chronic kidney disease and cardiovascular events. Heart failure progression necessitates considering combined heart/kidney transplant given improved outcomes versus isolated heart in advanced disease. In this case due to organ availability and critical illness- heart transplant was performed first with plan for renal transplant after interval recovery.

Conclusion: Early diagnosis of Liddle's and aggressive management of the resulting hypertension is critical, but successful management of the advanced sequelae of untreated disease with transplant is feasible.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 6

Category: Heart Failure and Cardiomyopathies

Title: A CASE REPORT ON ACUTE HEART FAILURE SECONDARY TO CONCURRENT ACUTE MYOCARDITIS AND DILATED CARDIOMYOPATHY IN A PATIENT WITH ENTEROVIRUS INFECTION

Author Block: Micah Fiel Baliclic, Terence Jay Regala, Christian Marie Araceli Solis, Quennie Yu, Rodney Jimenez, Heart Institute, St. Luke's Medical Center - Global City, Taguig, Philippines, Department of Medicine, St. Luke's Medical Center Global City, Philippines

Abstract Body:

Background: Acute myocarditis is an inflammatory cardiac disease presenting with a varied course spanning from complete resolution to development of dilated cardiomyopathy and heart failure.

Case: We report a case of a 54 year-old female with no known co-morbidities who was brought to the emergency department due to 4 day-history of diarrhea, exertional dyspnea, orthopnea, and palpitations. There was no known family history of cardiac or autoimmune disease. On physical examination, she was hypotensive, tachycardic, tachypneic, with crackles in bilateral lungs and regular cardiac rhythm, absent murmurs, and no edema. She tested positive for Human Rhinovirus/ Enterovirus and Enterotoxigenic Escherichia coli via RT-PCR. An echocardiogram revealed an ejection fraction of 14.4% with dilated chambers and global hypokinesia. Findings of the cardiac magnetic resonance imaging were suggestive of acute myocarditis. The patient was started on milrinone and diuretics, then maximized on heart failure medications (sacubitril/valsartan, bisoprolol, captopril, dapagliflozin, spironolactone, coenzyme Q10, and L-carnitine). Heart rate and inflammation control were achieved with amiodarone, ivabradine, and colchicine, respectively. She was introduced on midodrine and cardiac rehabilitation, and eventually discharged.

Decision-making: This case report provides evidence that Enterovirus infection can lead to acute heart failure and myocarditis in adults. Acute myocarditis in its chronic phase which requires about months to years may evolve into post-inflammatory cardiomyopathy. To our knowledge, the incidence of myocarditis found with dilated cardiomyopathy in the acute to subacute phase is still unclear. The patient was deemed good candidate for cardiac transplantation and biventricular assist device implantation. However in settings where these options were not feasible, this case demonstrated optimal medical regimen for heart failure.

Conclusion: Understanding the mechanisms linking myocarditis and dilated cardiomyopathy will help individualize therapy to achieve favorable clinical outcomes.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 7
Category: Heart Failure and Cardiomyopathies
Title: SUCCESSFUL BRIDGE TO HEART TRANSPLANT WITH PERCUTANEOUS LEFT AXILLARY ARTERY PLACEMENT OF INTRA-AORTIC BALLOON PUMP:A CASE SERIES
Author Block: Aditi Singhvi, Vimal Bhardwaj, Varun Shetty, julius punnen, Bagirath Raghuraman, Meemansa Kashyap Buch, SR, NARAYANA INSTITUTE OF CARDIAC SCIENCES, BENGALURU, India
Abstract Body:
Background: Intra-aortic balloon pump (IABP) is being used increasingly to sustain patients' hemodynamics and organ function while they are on the heart transplant (HT) waiting list. However, femoral IABP restricts mobility, which can lead to further deconditioning of patients who require prolonged support. Percutaneous insertion of IABP via the axillary artery overcomes this disadvantage. We report our experience with percutaneous IABP placement in the left axillary artery.
Methods: Data collected by retrospective chart review of patients who underwent percutaneous placement of left axillary IABP as bridge to HT at our center.
Results: Three patients underwent left axillary IABP implantation. Clinical parameters are described in Table 1. The indication in all was combined pre (proven to be reversible) and post capillary pulmonary hypertension despite high dose inotropes. There was improvement of end organ function post IABP. All patients were ambulated with axillary IABP. None required escalation of support. All patients underwent HT. None had primary graft dysfunction. 30-day survival post HT was 100%.
Conclusion: This case series demonstrates that percutaneous insertion of IABP through the left axillary artery is a feasible, efficacious and relatively well-tolerated strategy to bridge advanced HF patients to HT. This permits ambulation in those requiring prolonged support. Post HT outcomes are favourable. To the

best of our knowledge, this is the first report of this strategy in India.

BASELINE VARIABLES						
	CASE 1	CASE 2	CASE 3			
AGE	56	47	31			
SEX	Male	Male	MALE			
DIAGNOSIS	Non-ischemic cardiomyopathy	Valvular cardiomyopathy due to severe aortic regurgitation (status post Bentall surgery)	Non-ischemic cardiomyopathy			
INOTROPES	Milrinone, dobutamine	Milrinone, dobutamine	Milrinone			
DAYS ON AXILLARY IABP	12	30	17			
WEIGHT (kg)	71	73	68			
BMI (kg/m ²)	25.5	23.38	25			
VITALS						
SBP (mmHg)	90	92	100			
DBP (mmHg)	60	60	80			
HR (bpm)	88	80	90			
ECHOCARDIOGRAPHY						
LVEF (%)	15	25	25			
LVEDD (cm)	8.2	8.5	7.5			
	PRE IABP	POST IABP	PRE IABP	POST IABP	PRE IABP	POST IABP
LABORATORY VALUES						
Haemoglobin (mg/dL)	9.5	9	10.1	10.9	11.8	10.2
Platelet count (x10 ³ /mL)	336	228	149	205	271	309
BUN (mg/dL)	21	14	45	65	13	14
Creatinine (mg/dL)	2.02	1.19	1.65	1.20	0.67	0.65
AST (IU/L)	510	55	32	33	39	31
ALT (IU/L)	857	282	56	25	36	23
Total bilirubin (mg/dL)	1.3	0.8	3.5	1.6	1	0.48
INR	1.2		1.5		1.6	
Albumin (mg/dL)	3.5		3.7		3.5	
NT-proBNP (pg/mL)	5,710		57,000		13,800	
INVASIVE HAEMODYNAMICS						
RAP (mmHg)	6	10	15	10	8	4
mPAP (mmHg)	42	34	37	30	51	36
PCWP (mmHg)	28	25	28	22	35	26
CO (L/min)	2.93	3.8	3.4	3.6	3.3	4.6
CI (L/min/m ²)	1.65	2.2	1.8	1.9	1.86	2.6
PVR (wood units)	4.7	2.3	3	2.2	4.8	2.2
SVR (dynes/sec/cm ⁵)	1,280	1,037	1,529		1,503	
LV CPO INDEX (W/m ²)	0.22		0.32		0.48	
RV CPO INDEX (W/m ²)	0.15		0.15		0.37	
RAP/PCWP	0.2		0.54		0.23	
PAPi	4.8		1.8		4.3	
COMPLICATIONS OF AXILLARY IABP	None		IABP rupture requiring exchange twice		Repositioning done twice. Brachial plexopathy post open removal.	

Table 1. Baseline variables, laboratory values, invasive haemodynamics pre and post IABP and complications.

(BMI=body mass index, SBP=systolic blood pressure, DBP=diastolic blood pressure, HR=heart rate, LVEF=left ventricular ejection fraction, LVEDD=left ventricle end diastolic dimension, IABP=Intra-aortic balloon pump, BUN=blood urea nitrogen, AST= aspartate transaminase, ALT=alanine transaminase, INR=Internationalized Standardized Ratio, NT-proBNP= N-terminal pro brain natriuretic peptide, RAP= right atrial pressure, mPAP= mean pulmonary artery pressure, PCWP=pulmonary capillary wedge pressure, CO= cardiac output, CI=cardiac index, PVR= pulmonary vascular resistance, SVR=systemic vascular resistance, LV CPO= left ventricle cardiac power output, RV CPO= right ventricle cardiac power output, PAPi= pulmonary artery pulsatility index)

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 8
Category: Heart Failure and Cardiomyopathies

Title: DEVELOPMENT OF A MOBILIZATION ALGORITHM IN PATIENTS RECOVERING FROM ACUTE HEART FAILURE: A DELPHI CONSENSUS

Author Block: Akhila Satyamurthy, Padmakumar Ramachandran, Abraham Samuel Babu, Manipal Academy of Higher Education, Manipal, India

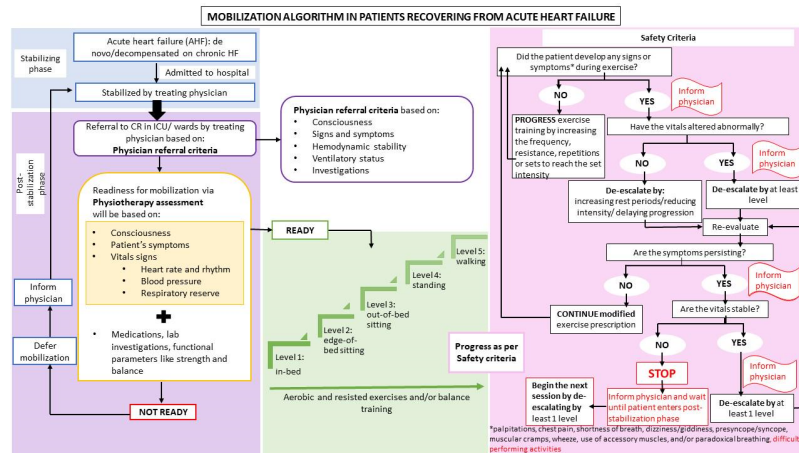
Background: Early mobilization and exercise training in patients recovering from acute heart failure (AHF) is of interest. Despite the evidence, there is a lack of uniformity in initiation time, exercise prescription, safety criteria, and termination criteria. Therefore, the study aims to develop a mobilization algorithm for patients recovering from AHF.

Methods: A modified Delphi process was undertaken involving 17 panelists, from across the globe. In Round 1, new variables were collected, and the percentage of agreement for the compiled variables was calculated. In Round 2, agreement for revised variables on a 5-point Likert scale was calculated, followed by Round 3, in which the algorithm was formulated. New variables were identified through inductive thematic analysis. Agreement was analyzed using descriptive statistics and Kappa statistics for level of agreement between the panelists. Consensus was defined as statements with at least $\geq 70\%$ agreement and a mean rating ≥ 3 .

Results: 118/170 (69.4%) statements reached consensus and had a fair level of agreement between panelists ($W \geq 0.3$, $p < 0.001$), except for termination criteria ($W = 0.17$, $p < 0.001$). These variables were re-organized to formulate the mobilization algorithm (Figure 1) and the various criteria.

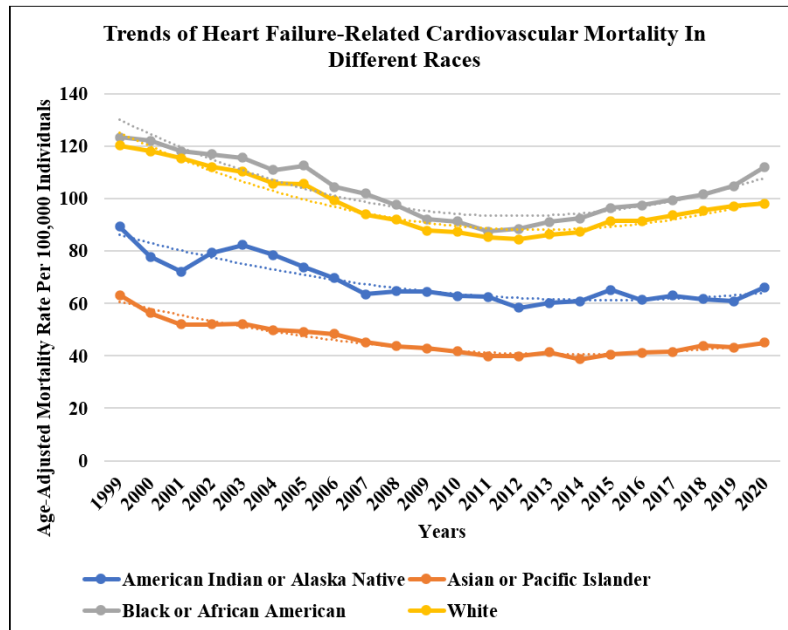
Abstract Body:

Conclusion: A physician-referral criteria, a physiotherapy assessment of readiness to EBCR, exercise prescription, safety criteria, and termination criteria was formulated by obtaining consensus from experts in CR and/or heart failure.



Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 9
Category: Heart Failure and Cardiomyopathies
Title: DECADES OF HEART HEALTH: INSIGHTS INTO HEART FAILURE-RELATED CARDIOVASCULAR MORTALITY TRENDS IN ASIAN AMERICANS
Author Block: Yong Hao Yeo, [Kieran Lee](#), Ghee Kheng Lim, Kwan S. Lee, Corewell Health William Beaumont University Hospital, Royal Oak, MI, USA, Mayo Clinic, Scottsdale, AZ, USA
Abstract Body:
Background: Heart failure (HF) management has advanced in recent years, yet real-world HF mortality data in Asian Americans is limited.
Methods: Using CDC WONDER, we included patients ≥ 25 years old (1999 to 2020). Cardiovascular diseases (CVD) were listed as the underlying cause of death, with HF as the contributing cause, capturing patients where HF was either the direct or proximate cause of death. Age-adjusted mortality rates (AAMR) were calculated per 100,000 people.
Results: There were 73,505 HF-related CVD deaths in Asian Americans. Overall, AAMR in Asian Americans was lower than the other races (Asian 44.2 vs American Indian 65.8 vs White 97.3 vs African American 102.5). The AAMR decreased from 63.1 (95% CI, 60.3-65.9) in 1999 to 39.9 (95% CI, 38.5-41.3) in 2012, with an annual percent change (APC) of -3.1 (95% CI, -3.6- -2.7), but increased to 45.1 (95% CI, 44.0-46.2) in 2020 with an APC of 1.6 (95% CI, 0.6-2.6). Males had higher AAMR than females (51.1 [95% CI, 50.5-51.6] vs. 39.1 [95% CI, 38.7-39.5]). The top three Asian American subgroups with the highest percentage mortality were Filipino (22.6%), Chinese (20.3%) and Asian Indian (15.4%). The West region had the highest AAMR (50.1 [95% CI, 49.7-50.6]). The AAMR was higher in rural areas than in urban areas (61.6 [95% CI, 59.5-63.6] vs. 43.6 [95% CI, 43.2-43.9]).
Conclusion: HF-related CVD mortality in Asian Americans declined in the first decade but increased in the second decade. More effort is needed to address

the disparities in sex, subgroup, and location.



Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 10

Category: Heart Failure and Cardiomyopathies

Title: AN UNUSUAL CASE OF SARCOIDOSIS MIMICKING ACS

Author Block:

Pranjit Deb, Sindhu Rao Malla, Debasis Acharya, Anindya Banerjee, Abhinav Kumar, Ramachandra Barik, Saroj Kumar Sahoo, Debasish Das, AIIMS BHUBANESWAR, BHUBANESWAR, India

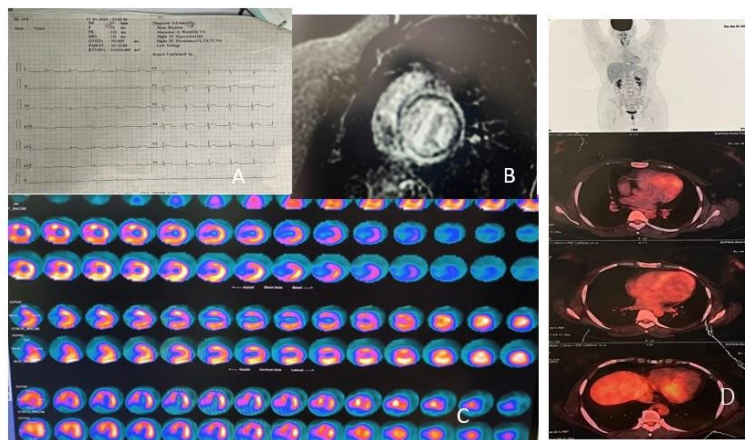
Background: Sarcoidosis is an inflammatory disease characterized by noncaseating granulomas that can involve nearly every organ system.

Case: A 27 year old female presented with chest pain and palpitations since 6 hours. ECG was suggestive of anterior wall MI. ECHO showed global hypokinesia with EF of 30%. Next day, patient developed multiple episodes of monomorphic VT. CAG was normal. Cardiac MRI showed basal mid myocardial and sub epicardial enhancement. Myocardial perfusion imaging showed scar tissue in apicoanterior segment. CT chest and abdomen were unremarkable. Serum ACE was normal. FDG PET-CT showed diffuse hypermetabolism in the apex, septum and basal inferior wall of the left ventricle - suggestive of cardiac sarcoidosis. USG neck showed a well defined solid hypoechoic thyroid lesion, biopsy of which showed non caseating granulomas.

Decision-making: VT could have been explained by anterior wall ischemia, however the young age and normal CAG led to further work-up. When combined with resting perfusion imaging, cardiac PET has the ability to colocalize scar and inflammatory burden in the myocardium. Though typical hilar lymphadenopathy was absent, CMR and FDG-PET showed cardiac involvement. Confirmatory diagnosis was thus made by thyroid nodule biopsy.

Abstract Body:

Conclusion: Cardiac sarcoidosis is underdiagnosed despite accounting for a significant share of sarcoid-related mortality. This case report highlights the importance of ruling out sarcoidosis in young patients presenting as ACS or VT.



(A) ECG showing ST segment elevation in anterior chest leads with reciprocal ST changes in inferior leads. (B) Demonstrated diffuse patchy hyperenhancement in the basal and mid ventricle in a non-ischemic pattern in addition to transmural enhancement in the thinned apical lateral wall (C) fixed defect in apico anterior segment of LV myocardium, (D) FDG-PET showing Diffuse hypermetabolism in the apex, septum and basal inferior wall of the left ventricle.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 11

Category: Heart Failure and Cardiomyopathies

Title: AN INTRIGUING CASE OF YOUNG FEMALE WITH CORONARY ARTERY DISEASE AND LEFT VENTRICULAR DYSFUNCTION

Author Block: Shaheer Ahmed, [Nikhil Singhania](#), Harish Goyal, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

Abstract Body:

Background: Aorto-arteritis might present with isolated coronary artery involvement as the initial presentation

Case: A female in her 40s presented with complaints of an episode of rest angina three months back. ECG showed ST depression in V4-V6. Echocardiography showed global LV hypokinesia with an ejection fraction of 40%. A coronary angiogram showed right coronary artery ostial 95% stenosis and LAD mid 60% stenosis.

Decision-making: Since she had an aortic-ostial lesion, LV dysfunction, which was out of proportion to the coronary lesion and did not have any risk factors for CAD, we decided to work up for vasculitis. ESR was elevated, and a PET scan showed uptake in the aorta consistent with aorto-arteritis. She was started on prednisolone 1 mg/kg and planned for PCI once inflammatory markers were controlled. At three months, ESR was normal, and LV ejection fraction improved to 53%. She underwent successful PCI to RCA. LAD fractional flow reserve was normal, hence not stented.

Conclusion: Coronary artery disease presenting in pre-menopausal females, without conventional risk factors and aorto-ostial lesions need to be evaluated for aortoarteritis.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 12
Category: Heart Failure and Cardiomyopathies
Title: PULMONARY EMBOLISM FOLLOWING ACUTE PANCREATITIS
Author Block: Raghav Aggarwal, Samir M. Kubba, Dharamshila Narayana Superspeciality Hospital, Delhi, India

Background: Vascular complications of pancreatitis are a major cause of morbidity and mortality mostly related to haemorrhage from arterial erosion or pseudoaneurysms. Ischaemic complications including splanchnic thrombosis and variceal complications are amongst other complications. However the frequency of pulmonary embolism is extremely rare.

Case: A 70 years old hypertensive female presented with complaints of giddiness with profuse sweating following an episode of severe epigastric pain. ECG showed RV Hypertrophy with strain. Troponins & NT Pro BNP were elevated. Echocardiography showed RA & RV dilated with 60/60 sign (pulmonary artery acceleration time <60msec and PASP <60 mmHg) and positive McConnell's sign. Pulmonary embolism was suspected. However CT Pulmonary Angiography could not be done in view deranged kidney function. D-Dimer levels were elevated (2250 ng/mL). Lower limb Doppler showed deep vein thrombosis in bilateral common femoral veins. Ventilation Perfusion Scan suggested pulmonary embolism. She was managed with enoxaparin. 2 days later she had a recurrence of severe epigastric pain. Amylase (652 U/L) and lipase (817 U/L) levels were significantly elevated and a diagnosis of acute pancreatitis was made and confirmed on Ultrasound & NCCT abdomen.

Decision-making: She was managed conservatively. SpO2 improved and pain recovered. MRCP & Endoscopic ultrasound did not reveal any significant findings. She was discharged on apixaban.

Conclusion: Pulmonary thromboembolism is a very rare and dreadful complication of vascular thrombosis in acute pancreatitis. There are only a few case reports documenting an association between acute pancreatitis and pulmonary embolism. Postulated mechanisms include release of proteolytic enzymes from the pancreas and direct vasculitis. We present this case to raise awareness about this extremely rare albeit life threatening complication. There should be a high index of suspicion and patients should be managed with anticoagulation once pulmonary embolism is diagnosed.

Abstract Body:

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 13

Category: Heart Failure and Cardiomyopathies

Title: SHOCK INDEX, MODIFIED SHOCK INDEX AND AGE-ADJUSTED SHOCK INDEX AS SIMPLE EARLY PREDICTORS OF MORTALITY IN ACUTE HEART FAILURE PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Chiquita Febby Pragitara, Muammar Emir Ananta, Billy Dohotan Dohar, Isna Nisrina Hardani, Eragraditya Hardianto, Bayushi Eka Putra, Berkah General Hospital, Pandeglang, Indonesia, Cempaka Putih Jakarta Islamic Hospital, Indonesia

Abstract Body:

Background: Shock Index (SI), defined as the ratio of heart rate to systolic blood pressure, has been reported to predict worse prognosis in acute myocardial infarction and pulmonary embolism patients. We aimed to investigate the prognostic value of SI and its derivatives-MSI, ASI, and mRSI-for predicting mortality in acute heart failure patients (AHF).

Methods: A systematic search was conducted through Pubmed and Embase for articles evaluating the association between SI, MSI, ASI, or mRSI with mortality of AHF patients. The Newcastle-Ottawa Scale was used to assess risk of bias. The Odds Ratio (OR) pooled using a random-effects model with inverse-variance weighting method.

Results: A total of 120 articles were found and 9 articles were included. Meta-analyses found significantly higher odds of in-hospital mortality in patients with high SI (OR 2.35; 95% CI 2.00-2.76; I² = 0%), high MSI (OR 2.86; 95%CI 2.21-3.71; I² = 63%) and high ASI (OR 2.82; 95% CI 2.39-3.32; I² = 0%). Bivariate model found in-hospital mortality in AHF patients can be predicted with SI (AUC of SROC 0.64 [0.60-0.68]) and ASI (AUC of SROC 0.66 [0.62-0.70]). However, SI was not significantly associated with post-discharge mortality (OR 2.64; 0.63-11.04; I² = 94%). One study reported patients with low mRSI (<0.75) had higher rates of 180-day mortality (HR 2.20; 95% CI 1.51-3.22).

Conclusion: While shock indices significantly predict the outcomes of heart

failure patients, they are not a reliable predictor of prognosis in these patients.

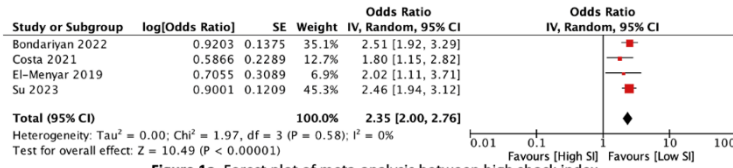


Figure 1a. Forest plot of meta-analysis between high shock index and in-hospital mortality in acute heart failure patients

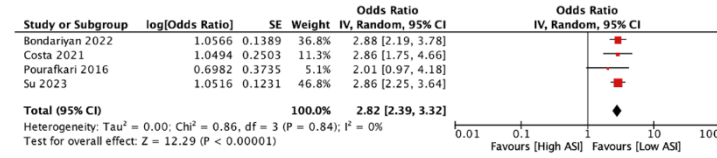


Figure 1b. Forest plot of meta-analysis between high age-adjusted shock index and in-hospital mortality in acute heart failure patients

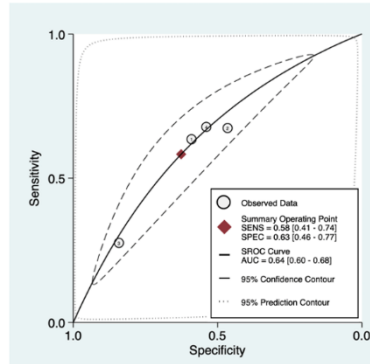


Figure 1c. SROC of shock index in predicting in-hospital mortality of acute heart failure patients

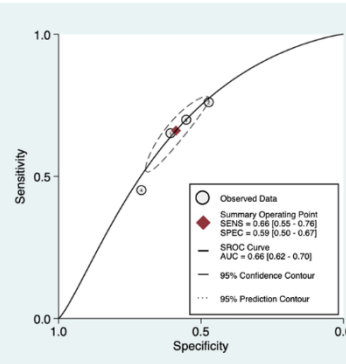


Figure 1d. SROC of age-adjusted shock index in predicting in-hospital mortality of acute heart failure patients

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 14

Category: Heart Failure and Cardiomyopathies
Title: IMPACT OF A NURSE-LED,REMOTE MANAGEMENT ON OPTIMIZATION OF GUIDELINE-DIRECTED MEDICAL THERAPY FOR HEART FAILURE
Author Block: Pankaj Banotra, Aditi Singhvi, Prabir Jana, Pankaj PINJARI, Narayana Institute of Cardiac Sciences, Bangalore, India

Background: Guideline-directed medical therapy (GDMT) for heart failure with reduced ejection fraction (HFrEF) reduces morbidity and mortality. Usual approaches for optimizing GDMT, which usually involves physician visits, have failed to achieve widespread target doses. The aim of this study was to assess the effectiveness of remote management in GDMT optimization.

Methods: Patients seen in the HF clinic were asked to monitor vitals at home and send a mobile message weekly. A trained nurse, under the supervision of a HF cardiologist, using an algorithm, uptitrated GDMT based on patients' vitals and laboratory values. Patients with EF $\leq 40\%$, ≥ 18 years, who messaged at least once a month were included in the analysis. Data was collected via retrospective review of records.

Results: Of 543 HFrEF patients seen between January 1, 2023 to September 30, 2023, 119 met the inclusion criteria. Characteristics are shown in Figure 1(A). The number of patients on GDMT at baseline and at 6 months is shown in Figure 1(B). Number of patients receiving 0-25%, 26-50%, 51-75%, and 75-100% of target GDMT dose at baseline is shown in Figure 1(C) and at 6 months in Figure 1(D). Nurse-led, remote management achieved target doses of GDMT in majority of HFrEF patients and all patients had uptitration of medications. No significant adverse events were noted.

Abstract Body:

Conclusion: A nurse-led, remote management strategy was effective in GDMT uptitration. Further studies assessing the role of remote management in GDMT uptitration are needed.

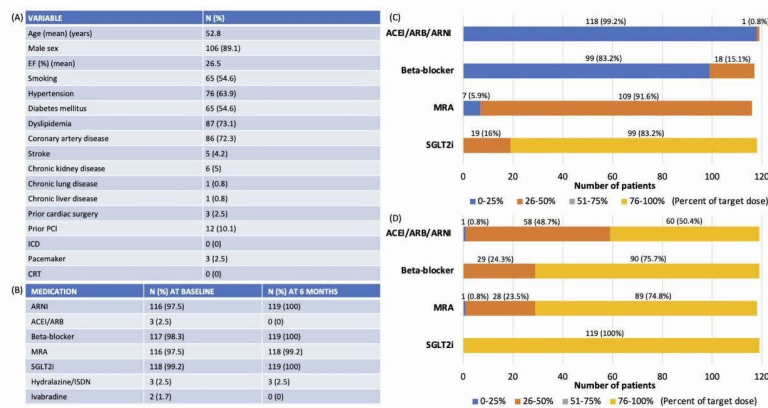


Figure 1. (A) Baseline characteristics (B) Number of patients on heart failure medical therapy at baseline and at 6 months (C) Medication dosing among patients at baseline (D) Medication dosing among patients at 6 months (EF=ejection fraction, PCI=percutaneous coronary intervention, ICD=implantable cardioverter defibrillator, CRT=cardiac resynchronization therapy, ARNI=angiotensin receptor neprilysin inhibitor, ACEI=angiotensin converting enzyme inhibitor, ARB=angiotensin receptor blocker, MRA=mineralocorticoid receptor antagonist, SGLT2i=sodium-glucose cotransporter-2 inhibitor, ISDN=isosorbide dinitrate)

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 15
Category: Heart Failure and Cardiomyopathies

Title: PROGNOSTIC VALUE OF EARLY MEASUREMENT OF URINE SODIUM CONCENTRATION AND THERAPEUTIC UTILITY OF NATRIURESIS-GUIDED DECONGESTION IN ACUTE HEART FAILURE: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Muammar Emir Ananta, Chiquita Febby Pragitara, Bayushi Eka Putra, Indra Perkasa, Cempaka Putih Jakarta Islamic Hospital, Central Jakarta, Indonesia, Berkah General Hospital, Pandeglang, Indonesia

Abstract Body:
Background: Persistent congestion resulting from insufficient diuresis is linked to more severe outcomes. Urinary sodium concentration (UNa) has recently been proposed as a promising biomarker to evaluate diuretic response, readily obtained from spot urine samples. We aimed to evaluate its prognostic role and clinical utility in acute heart failure patients.
Methods: Systematic search was conducted through Pubmed, Embase, and Cochrane Library without language restriction. We included studies that stratified the value of early UNa (measured within 6 hours after diuretic administration) and evaluated its association with any outcome of interest. We compared patients with low versus high UNa, or lowest versus highest category of UNa. Fixed or random-effects meta-analyses were performed to calculate effect sizes with 95% Confidence Interval (95% CI) for each outcome.
Results: Fifteen studies (n= 2,407 patients) were included, two of which were randomized controlled trials (RCTs) evaluating natriuresis-guided decongestion. Cut-off for low UNa varied between 49-113 mmol/L. Low UNa predicts poorer outcomes in terms of diuretic resistance (OR 10.52 [95% CI 3.84-28.79]; $I^2 = 0\%$), worsening renal function (OR 2.51 [95% CI 1.85-3.39]; $I^2 = 0\%$), post-discharge all-cause mortality (OR 2.95 [95% CI 1.47-5.93]; $I^2 = 0\%$), and composite cardiovascular events (OR 6.65 [95% CI 1.91-23.12]; $I^2 = 64\%$), but not persistent congestion (OR 4.02 [95% CI 0.71-22.87]; $I^2 = 82\%$). The group with low UNa also had lower cumulative weight loss (SMD -0.42 [95% CI -0.58-(-0.25)]; $I^2 = 43\%$) and diuresis (SMD -0.35 [95% CI -0.61-(-0.08)]; $I^2 = 49\%$), but not longer length of stay (WMD 1.33 days [95% CI -5.63-8.28 days]; $I^2 = 88\%$). Protocolized natriuresis-guided decongestion effectively enhanced 48h natriuresis (WMD 130.90 mmol [95% CI 38.05-223.76 mmol]; $I^2 = 88\%$), 48h diuresis (WMD 1,063.12 mL [95% CI 334.95-1,791.29 mL]; $I^2 = 90\%$), and shortened length of stay (WMD -1.12 days [95% CI -1.33-(-0.92) days]; $I^2 = 36\%$).
Conclusion: The meta-analysis supports early measurement of UNa and protocolized natriuresis-guided decongestion in acute heart failure patients as it has prognostic value and gives therapeutic benefit.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 16

Category: Heart Failure and Cardiomyopathies

Title: YOGA AS AN ADJUVANT THERAPY FOR BETTER LONG-TERM OUTCOMES IN HEART FAILURE PATIENTS ON GUIDELINE DIRECTED MEDICAL THERAPY

Author Block: Ajit Singh, Tom Devasia, Sridevi Prabhu, Krishnananda Nayak, Annapoorna Kadiyali, Kasturba Medical College, Manipal, India, Manipal College of Health Professions, Manipal, India

Abstract Body:

Background: Heart failure (HF) is a complex chronic disease that prevails as a prime cause of concern for healthcare sectors worldwide. Analysis of the available literature is evidence that yoga therapy and essential lifestyle modifications have considerably augmented heart failure patients' quality of life and enhanced left ventricular ejection fraction and NYHA functional class.

Methods: Our study aims to establish the long-term outcomes of yoga therapy to validate the addition of yoga therapy as a complementary treatment in managing HF.

A prospective non-randomized study was conducted at a tertiary care center, including 85 HF patients with NYHA class III or less who underwent coronary intervention or procedures within the past six months to one year and continuing GDMT. Forty participants were part of the Interventional Group (IG), and 45 were in the Non-Interventional Group (Non-IG). The IG received yoga therapy and GDMT, while the non-IG were only under standard GDMT. Echocardiographic parameters and NYHA functional classes were compared at various follow-ups for up to one year to see the impact of yoga therapy on HF patients.

Results: A total of 85 heart failure patients were recruited, including 70 males and 15 females. Echocardiographic parameters have improved against baseline and demonstrated a significant difference between IG and non-IG groups for left ventricular ejection fraction ($p < 0.001$, at 6-month and 12-month follow-up), end-systolic volume ($p = 0.037$, at 6-month), global longitudinal strain ($p < 0.001$, at 6 and 12-month), end-diastolic chamber dimensions ($p = 0.005$ at 12-month), and tricuspid annular plane systolic excursion ($p < 0.001$, at 6 and 12-month) and along with few other important parameters. The functional outcome (NYHA classes) was assessed after 6-month and 12-month follow-ups, and p-values of 0.013 and 0.043 showed a substantial improvement in the IG compared to the baseline.

Conclusion: Yoga therapy improves prognosis, functional outcome, and left ventricular performance in HF patients with NYHA III or less. Hence, this investigation has attempted to justify its importance as an adjuvant/complementary treatment for HF patients.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 17

Category: Heart Failure and Cardiomyopathies

Title: LIGHTING THE WAY: PHOTOPHERESIS RESCUES HEART TRANSPLANT FROM SEVERE REJECTION

Author Block: Meemansa Kashyap Buch, SR, LIMESH M, Sunil Bhat, SABARISH SHANKARAN, julius punnen, Aditi Singhvi, Bagirath Raghuraman, NARAYANA INSTITUTE OF CARDIAC SCIENCES, BENGALURU, India

Abstract Body:

Background: The incidence of acute cellular rejection in the first year post heart transplant (HT) in the modern era is 13%. A small number of cases have recurrent or resistant rejection despite corticosteroids (CS), cytolytic immunosuppressive therapy and optimization of maintenance immunosuppression. Extracorporeal photopheresis (ECP) is an immunologic modality that causes specific lymphocytic destruction of clones of photomodulated T cells. Reports have demonstrated its efficacy in the prevention and reversal of acute cardiac allograft rejection. We present a case of refractory cardiac allograft rejection resistant to conventional pharmacologic treatment, who responded to ECP.

Case: A 25-year-old male developed cardiogenic shock 9 days post HT and required veno-arterial extracorporeal membrane oxygen (VA-ECMO). Endomyocardial biopsy (EMB) showed grade II ACR and pathologic AMR. He did not have donor specific antibodies. He was treated with IV CS, anti-thymocyte globulin, plasmapheresis and IV immunoglobulin. VA-ECMO was decannulated. Repeat EMB showed persistent grade II ACR, but resolution of AMR. He was treated with oral pulse CS and escalation of maintenance immunosuppression. Third EMB showed similar findings, and donor-derived cell free DNA (ddcfDNA) was elevated. ECP was initiated on 2 subsequent days. Another session consisting of two consecutive ECP treatments was done 3 weeks later. Repeat biopsy showed no evidence of rejection. ddcfDNA also returned to normal range. Routine screening biopsies and ddcfDNA have remained normal since and patient has returned to normal activity.

Decision-making: ECP has clear utility in prevention and treatment of refractory rejection. There are no published cases on the use of this modality for cardiac allograft rejection in India. We presented a patient with rejection refractory to standard immunosuppression and cytolytic therapy, whose rejection rapidly resolved following ECP. He tolerated the procedure well; no short-term adverse events were noted.

Conclusion: ECP is a rapid and well-tolerated modality for the treatment of acute cellular rejection. As such, we strongly recommend its addition to the armamentarium of HT centers.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 18

Category: Interventional and Structural

Title: ENDO-VASCULAR REPAIR WITH STENT GRAFT FOR AORTIC INJURY DURING POEM (PER ORAL ENDOSCOPIC MYOTOMY) PROCEDURE

Author Block: SHABBIR ALI SHAIK, APOLLO HOSPITALS, JUBILEE HILLS, HYDERABAD., HYDERABAD, TN, India

Abstract Body:

Background: POEMless reduction in mortality and is a minimally invasive treatment for esophageal achalasia. Aortic perforation is the rarest of complications, first time reported.

Case: 34 year old female with Achalasia Cardia taken for POEM procedure. Submucosal tunnel is created using endoscopic submucosal dissection technique. During procedure patient developed sudden hypotension with torrential bleeding from the tunnel, suspected aortic injury. Aortogram showed extravasation of contrast into esophageal tunnel.

Decision-making: After Heart-team discussion an emergency Endovascular aortic repair(EVAR) was planned. In view severe vasospasm of femoral arteries, left subclavian artery punctured and a 26mmX26mm Valiant thoracic Stent graft inserted with great difficulty and deployed above the level of origin of coeliac arteries. Aortogram showed complete sealing of aortic perforation. During removal of graft delivery system, there was avulsion of subclavian artery which repaired with 2 covered stents through left brachial surgical cut down. Endoscopy performed on 3rd post operative day showed good mucosal flap integrity.

Conclusion: POEM is an effective endoscopic treatment modality for achalasia cardia. This was the first case where aortic Injury during POEM procedure successfully treated with EVAR. Endovascular treatment avoids the morbidity of open surgery and has neurologic complications when compared with open

procedure in traumatic conditions.

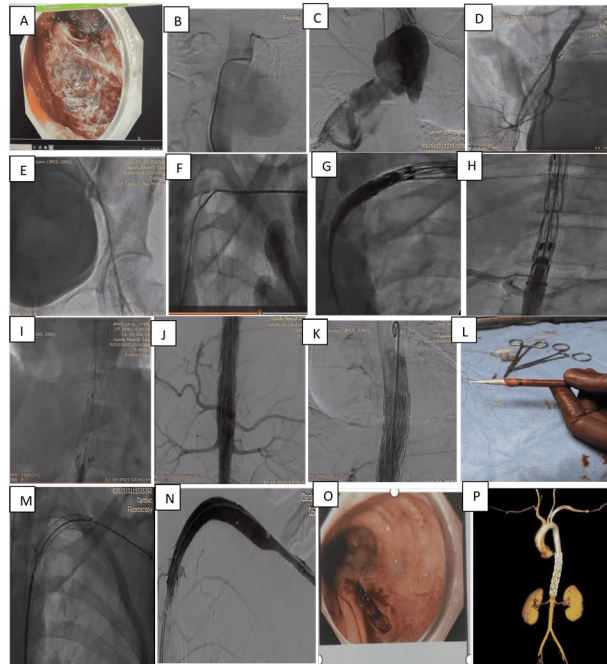


Figure 1: Endovascular Repair with Stent Graft for Aortic Injury during POEM (Per Oral Endoscopic Myotomy) Procedure. A) Endoscopic picture showing profuse bleeding into the oesophagus from the sub-mucosal tunnel. B,C) Fluoroscopic images with leaking of contrast from descending aorta to oesophagus suggesting aortic rupture. D,E) Profound Spasm involving right and left femoral arteries respectively). F) Left Subclavian artery puncture for access, G,H) 26mmX26mm, 100cm Valiant thoracic Stent graft inserted through Left Subclavian access and deployment position checked just above the level of origin of coeliac artery respectively, I) Release of stent graft, K,L) Final aortograms with no leak of contrast from aorta to oesophagus. L) Avulsion of subclavian artery along with periclose-proglide sutures over the Captiva delivery system, M) Subclavian artery rupture sealed with two Fluency plus Vascular Stent Grafts(10X60cm & 8X100cm, proximal and distal respectively), N) Subclavian angiogram showed good sealing with no leak, O) Endoscopic image depicting preserved mucosal flap integrity with minimal clots, P) CT images post procedure depicting aortic stent graft with no Endo-leak and patent subclavian stents.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 19
Category: Interventional and Structural
Title: PERCUTANEOUS CORONARY INTERVENTION COMBINED WITH TREAT-REPAIR-TREAT STRATEGY IN A PATIENT WITH PULMONARY ARTERIAL HYPERTENSION ASSOCIATED WITH ATRIAL SEPTAL DEFECT AND LEFT MAIN CORONARY COMPRESSION SYNDROME
Author Block: Yuan He, Hong Gu, Dongmei Shi, Beijing Anzhen Hospital, Beijing, People's Republic of China
Abstract Body:
Background: Compression of left main coronary artery(LMCA) is a severe complication in pulmonary arterial hypertension (PAH) and the treatment strategy is tricky and should be individualized.
Case: We presented a patient with large atrial septal defect (ASD) and non-Eisenmenger PAH. On admission, the patient was in WHO-FC III, the echocardiogram demonstrated the presence of a secundum ASD (24mm in diameter) with enlarged right ventricle and compressed left ventricle (Table1). Right heart catheterization (RHC) showed the defect was non-correctable due to a pulmonary vascular resistance (PVR) of 9.49 Wood Units. Electrocardiogram (EKG) suggested myocardial ischemia and coronary angiography and coronary computed tomography angiography showed proximal left main coronary artery was compressed by extremely dilated pulmonary arterial trunk and subsequent intravascular ultrasound confirmed LMCA compression (minimum lumen area=3.8 mm²), which is named left main coronary compression syndrome (LMCS).
Decision-making: Percutaneous coronary intervention (PCI) using drug-eluting stent was performed and combined PAH-specific medications was prescribed simultaneously. At 6-month following the PCI procedure, PVR had decreased to 3.43 Wood Units , and percutaneous ASD closure procedure was performed. A 6-month follow-up, the patient was asymptomatic and had significantly improved pulmonary hemodynamics. The patient continues on Macitentan and antiplatelet therapy with close follow-up
Conclusion: LMCS should be considered as a possible complication for patients with PAH and myocardial ischemia. PCI combined with treat-repair-treat strategy may be an effective treatment strategy for patients with LMCS and ASD-PAH. Although the pulmonary hemodynamics normalized in this patient after ASD closure, lifelong PAH-specific medications are recommended for this patient

Session Title: Sunday Poster Session

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 20

Category: Interventional and Structural

Title: IS PERCUTANEOUS TRANSLUMINAL ANGIOPLASTY (PTA) THE WAY AHEAD IN HEMODIALYSIS PATIENT WITH CENTRAL VENOUS STENOSIS INSTEAD OF STENT IMPLANTATION: A STUDY OF OUTCOMES

Author Block: Kahan S. Mehta, Maurya Joshi, Jay Shah, Mohammed Omar, GMERS Medical College and Hospital, Vadodara, India

Background: Central venous stenosis and occlusion, a complication of central venous catheterization, are significant complications in hemodialysis patients that complicate dialysis. Clinical manifestations include ipsilateral arm or neck swelling and failure of hemodialysis access. The aim of this study was to determine the patency rate of percutaneous balloon angioplasty and stent implantation in hemodialysis patients who had central venous stenosis or occlusion for 1 month, 3 months, 6 months, and 12 months.

Methods: This observational, single-center study was based on data collected from endovascular interventions involving percutaneous transluminal angioplasty (PTA) or stent implantation for central venous stenosis or occlusion. The study was conducted in end-stage renal failure patients on hemodialysis with clinical signs of central venous stenosis or occlusion

Results: Endovascular procedures were performed on 90 hemodialysis patients with central venous stenosis or occlusion, consisting of 55 (61%) males and 35 (39%) females, with a mean age of 46.19±13.21 years. The sites of central vein stenosis or occlusion were the innominate veins in 13 cases, superior vena cava in 11 cases, a brachiocephalic vein in 7 cases, a subclavian vein in 5 cases, some having multiple site occlusion and some having AV fistula occlusion. The total success rate for all procedures was 97%. Only four patients underwent stent implantation, all patients underwent hemodialysis after the initial procedure. The primary patency for PTA at 1, 3, 6, and 12 months was 95%, 90%, 86%, and 84%, respectively. For stent implantation, primary patency at 1, 3, 6, and 12 months was 100%. The total number of reinterventions in 12 months was 8, with one patient requiring three reinterventions.

Conclusion: Endovascular interventions for central venous stenosis or occlusion in hemodialysis patients demonstrated a high success rate with no significant procedure-related complications. The primary patency rates for PTA and stent implantation were excellent, with stent implantation showing 100% primary patency at all time points. While the assisted patency rates for PTA were lower, the need for reinterventions was minimal.

Abstract Body:

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 22
Category: Interventional and Structural
Title: STUDY OF SHORT-TERM AND MID-TERM OUTCOMES IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION FOR LEFT MAIN CORONARY ARTERY DISEASE
Author Block: Snehal Paul, Gopi Aniyathodiyil, Fortis Hospital, Cunningham Road, Bangalore, India

Background: Revascularization improves survival of patients with unprotected LMCA disease compared with medical therapy alone. This study was conducted to determine the outcomes in patients undergoing percutaneous coronary intervention (PCI) for LMCA disease.

Methods: This is a prospective, single centre, observational study conducted over a period of one and half years from December 2019 to July 2021. Total 2959 patients underwent coronary angiogram during this period, out of which 74 patients underwent unprotected LM stenting and follow up was done for 6 months.

Results: Seventy-four patients underwent PCI for LMCA disease, with mean age 61.85+/-10.6 years. Out of 74 patients, 56 (75.4%) were male and 18 (24.6%) were female. Diabetes mellitus (DM) (60.8%) and hypertension (HTN) (58%) were the most common comorbidities, acute coronary syndrome was the most common presentation (35.1%). Mean ejection fraction was 49.35± 8.5%. Patients with Syntax score <22 were 55 (74.3%). True bifurcation lesions were less 18 (24%). Imaging-guided procedures were done in 25 (33.8%) cases. Debulking strategies were used in 6 (8.2%) patients. Total 11 (14.86%) major adverse cardiac or cerebrovascular events (MACCE) occurred, in which total 4 (5.4%) deaths occurred. Post-procedure check angiogram done in two patients (2.8%) due to post-PCI angina, revealed stent patency in one patient and stent thrombosis in the other. Recurrent hospitalisations were required for 3 patients (4%). Another 2 (2.7%) patients presented with angina, one with non-ST elevation myocardial infarction and the other with unstable angina.

Conclusion: In the present study it is observed that patients presenting with low left ventricular ejection fraction with cardiogenic shock and those with distal LM bifurcation lesions had higher MACCE. Imaging modalities do help in confirming stent apposition and aid in avoiding in-stent restenosis in future. LM-PCI may be a safe and efficacious alternative and may be done for patients with acute presentation, low to intermediate syntax score, high-risk group for surgery.

Abstract Body:

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 23

Category: Interventional and Structural

Title: ACCURACY OF DIFFERENT DIAGNOSTIC METHODS IN TETRALOGY OF FALLOT PATIENTS BEFORE BIVENTRICULAR REPAIR

Author Block: Dhruvin Snehal Pandya, Abhishek Pravinchandra Raval, N M Virani Wockhardt Hospital, Rajkot, India

Abstract Body:

Background: Accurate preoperative assessment of pulmonary artery (PA) anatomy, Major Aorto-pulmonary collateral arteries (MAPCAs), coronary anomalies, additional ventricular septal defects (VSD) and status of prior shunt is must prior to biventricular repair in classical Tetralogy of Fallot (ToF) patients. Determination of diagnostic accuracy in preoperative patients and further need of invasive angiography by age is studied.

Methods: A retrospective analysis of ToF patients (n=60) who underwent echocardiograms and various forms of angiography (invasive angiocardiology 70%, CT angiography 8.33%, both 16.66%, none 5%) over three months prior to surgery.

Results: PA anomalies were identified in 25% of patients, with echocardiography detecting 16.7% and CT angiography further identifying 5%. Echocardiography showed 89.3% sensitivity and 100% specificity for PA anomalies in children under 5 years, but in general, shows less sensitivity (66.7%) and specificity (98.3%). The collective use of non-invasive methods improved sensitivity to 86.7% and maintained 100% specificity. Abnormal vessels crossing the right ventricle outflow tract (RVOT) appeared in 10% of patients, with 8% undetected by either method, and 2% identified only by catheterization in children over 5. MAPCAs prevalence was significantly lower in children under 5 years (8.3%) compared to those over 5 (25%). 2 patients required post-operative coiling, indicating under-detection of significant vascular anomalies. Catheterization did not enhance the sensitivity or specificity for additional VSDs beyond echocardiography, though it was necessary for hemodynamic assessments of prior shunts. Discordance between echocardiography and intraoperative findings varied significantly with age, but the addition of CT improved correlation.

Conclusion: Echocardiography correlates well with surgical findings in children under 5 years. In children above 5, CT angiography is as effective as catheterization in defining PA anatomy and is essential for detailing MAPCAs when echocardiography is inconclusive. Catheterization remains reserved for precise MAPCA assessment and post-shunt evaluations.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 24

Category: Interventional and Structural

Title: RVOT STENTING IN A CHILD WITH TOF AND HCM

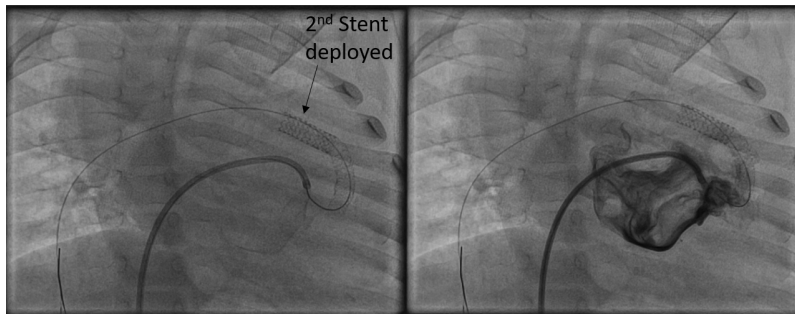
Author Block: Mohammad M. Kidwai, Dr Shaad Abqari, Mohammad M. Kamran, Mohammad A. Haseen, Dr Shamayal Rabbani, Jawaharlal Nehru Medical College and Hospital, Aligarh, India

Background: RVOT stenting has emerged as an alternative to BTT shunt. We present a case of RVOT stenting in a child of TOF with HCM.

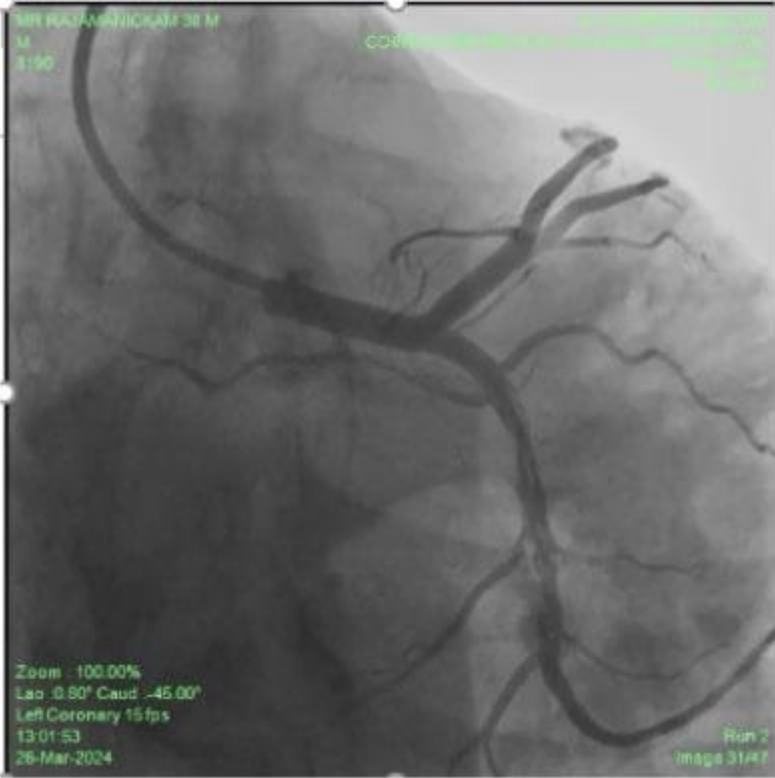
Case: A 3-year child presented with history of frequent spells and was diagnosed as TOF with concentric HCM. The association of HCM increases the risk of morbidity and mortality if complete repair is done. Thus, in view of the spells and presence of HCM RVOT stenting was planned.

Decision-making: The RVOT was crossed with a 0.014 PTCA wire and a stent of size 4 x36mm was deployed sparing the pulmonary annulus. As there was no increase in the saturation a second stent 6x18mm was deployed overlapping the distal end of the first stent. Following this the saturation improved to 88%.

Abstract Body: **Conclusion:** RVOT stenting in a case of TOF with HCM is a feasible palliative option, with good immediate results.



Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 25
Category: Interventional and Structural
Title: SPONTANEOUS CORONARY ARTERY DISSECTION IN NON INFARCT RELATED CORONARY ARTERY - NEW INSIGHTS INTO THIS NOT SO RARE CONDITION
Author Block: PRANESH SAMIAPPAN, Nambirajan Jayabalan, COIMBATORE MEDICAL COLLEGE, COIMBATORE, India
Abstract Body:
Background: This study analyses the risk factors and management strategies of Spontaneous coronary artery dissection in Non Infarct Related(Non -IRA) Coronary Artery in patients with Acute ST elevation Myocardial Infarction(STEMI) having underlying atherosclerotic Coronary artery disease (Infarct Related Artery).
Methods: This is a Prospective Observational study involving 100 patients with SCAD (based on YIP SAW Angiographic classification) in non IRA conducted at Coimbatore Medical College Hospital (CMCH) for a period of THREE YEARS.Non IRA SCAD will be conservatively managed with antiplatelets and statins. Follow up CAG and 100% SALINE OCT will be done after one year to assess the lesion characteristics. and to identify etiology.
Results: Males were more commonly affected than females (86% vs 14%). The age groups affected were 36% in 41-50 yrs, 24% in 51-60 yrs ,22% in < 40yrs.88% had history of smoking ,42% had diabetes , 26% had hypertension,40% had dyslipidemia. 98 % of patients had -TYPE 1 SCAD. RIGHT CORONARY ARTERY(RCA) is most commonly involved (50%) followed by LAD (37%) and LCX (13%). 100% SALINE OCT identified etiology Atherosclerotic (58%) vs Non Atherosclerotic(42%).
Conclusion: This is one of the largest studies in India related to SCAD. CONSERVATIVE MANAGEMENT STRATEGY - heals atherosclerotic SCAD and prevents progression of Non Atherosclerotic SCAD.



Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 26

Category: Interventional and Structural

Title: RARE PRESENTATION OF COARCTATION AS PARAPARESIS AND ITS REVERSAL WITH ENDOVASCULAR INTERVENTION

Author Block: Ankit Bansal, G. B. PANT HOSPITAL, NEW DELHI, India

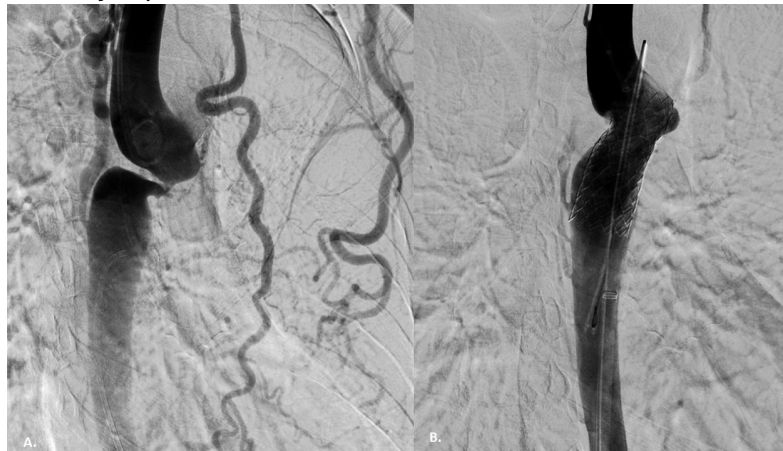
Background: Aortic coarctation presenting with neurological complications as compressive myelopathy is rare.

Case: We report a case of a 43-year-old, hypertensive, female who presented with gradually progressive paraparesis over 4 years. She was diagnosed to be having coarctation of the aorta with intra-spinal collaterals causing compressive myelopathy.

Decision-making: Computed tomography (CT) angiography showed post ductal coarctation of aorta with multiple arterial collaterals in the chest wall and spinal canal, bicuspid aortic valve, and left ventricular hypertrophy. On MRI the maximum dilated signal void was seen at C6 level causing near effacement of central spinal canal lumen causing significant compression and distortion of the spinal cord.

She underwent successful percutaneous endovascular implantation of a balloon-expandable aortic stent to relieve her aortic coarctation. This led to regression of her intra-spinal collaterals relieving her cord compression.

Abstract Body: **Conclusion:** Paraparesis as a presenting manifestation of aortic coarctation is rare. Endovascular stent implantation in coarctation of aorta to relieve compressive myelopathy is a safe and effective non-surgical option in such critically ill patients.



Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 27

Category: Interventional and Structural

Title: NOVEL TECHNIQUE TO PROTECT SIDE BRANCH FOR LEFT MAIN BIFURCATION STENOSIS

Author Block: Gaurav Sardarilal Verma, SMBT HEART INSTITUTE, Nashik, India

Background: Provisional stenting is an acceptable strategy for LM bifurcation. However, in spite of all precautions and even with jailed wire technique there is a risk of side branch pinching, occlusion or lumen compromise after stenting of Main vessel (MV). This is especially true for patients with high lipid content (plaque shift) or presence of thrombus in Distal LM or at the polygon of confluence. We propose a novel strategy, the modified trapped balloon technique (MTBT), to simplify the LM bifurcation lesions (LMLs) planned for provisional stenting especially in acute settings.

Methods: From December 2020 to July 2022, a total of 10 patients with LMLs who were candidates for provisional strategy were treated with MTBT. Immediate procedure results were observed, and clinical follow-ups were performed for atleast 1 year. After planning for a provisional LM stenting, the appropriately sized stent for LM to LAD stenting is placed in situ, a non-compliant balloon of same size as of ostium of LCx or 0.25mm size smaller is placed in ostium of LCX just inside the left main overlapping with the stent. First, LCx balloon is deployed at minimal pressures (4-6mmHg) to obliterate the LCx. This is followed by stent inflation at nominal pressure (8-10 atm.) at predefined site. After checking for adequate dilatation of both balloons on angiography, stent balloon is deflated. After 2-3 sec., LCx balloon is deflated and gently removed. This is followed by high pressure dilatation of stent balloon (14 atm., which is still in place). POT of the stent are performed with a non-compliant balloon of size matching with the distal LM diameter.

Results: This was the first study done in Left Main bifurcation lesions showing efficacy of MTBT in preventing significant lumen loss, plaque shift or carinal shift during provisional Left Main stenting, as judged by angiographic result. At 1 year follow up of these patients, all patients were clinically asymptomatic.

Conclusion: The MTBT protocol, which tremendously reduce the complication rates associated with the current standard provisional stenting procedure in complicated bifurcation lesions, shows acceptability in safety and efficacy.

Abstract Body:

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 28

Category: Ischemic Heart Disease
Title: HEMORRHAGIC MYOCARDIAL INFARCTION: LINKING MECHANICAL PRECURSOR TO CARDIAC RUPTURE

Author Block: Keyur P. Vora, Kinjal Bhatt, Shrenik Doshi, Nilesh Makadia, Tejas Pandya, Satyam Ratilal Udhreja, Rohan Dharmakumar, Synergy Superspecialty Hospital, Rajkot, India

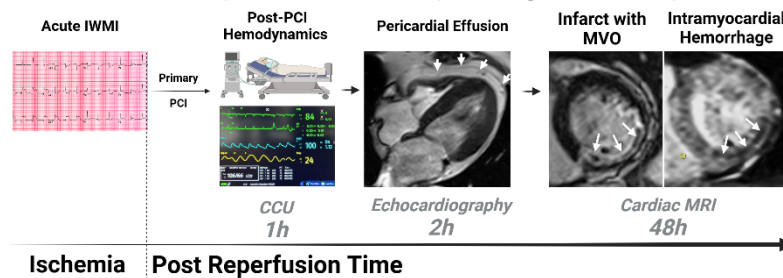
Background: Post-MI mechanical complications such as cardiac rupture present critical challenges in intensive care, including suboptimal hemodynamics despite optimal management. Post-reperfusion hemorrhage within the infarcted myocardium can lead to effusion and potential rupture.

Methods: A 65-year-old hypertensive male underwent emergency PCI following acute inferior wall MI. Clinical data, including hemodynamic parameters, imaging parameters from 2D echocardiography immediate post-PCI and cardiac magnetic resonance (CMR) with late gadolinium enhancement and T2* mapping on day 2, were collected for infarct and intramyocardial hemorrhage (IMH) analysis respectively.

Results: Following PCI, the patient exhibited persistent hypotension and developed frequent premature ventricular contractions. Echocardiography revealed continuous myocardial stunning with akinetic basal-mid inferior LV and moderate pericardial effusion. CMR analysis disclosed extensive IMH, indicating hemorrhage-mediated cardiomyocyte reperfusion injury on the top of ischemic myocardium. Key metrics included a 34.76%LV infarct size without pericarditis, 6.12%LV microvascular obstruction and 5.77%LV IMH at sub-endocardial basal-mid inferior LV, with LVEF of 30.74%.

Conclusion: Detection of new post-PCI pericardial effusion necessitates immediate consideration of hemorrhagic MI, particularly to assess for mechanical complications like impending cardiac rupture.

Abstract Body:



Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 29
Category: Ischemic Heart Disease
Title: EXPLORING SOLUBLE LECTIN-LIKE OXIDISED LOW-DENSITY LIPOPROTEIN RECEPTOR-1 (SLOX-1) AS A DIAGNOSTIC INDICATOR FOR ACUTE CORONARY SYNDROME IN CASES WITH DELAYED PRESENTATION
Author Block: Vibhor Agrawal, Sahil Chaudhary, WAHID ALI, Marina Raouf Abdelmessih Saleeb, Akshyaya Kumar Pradhan, King George's Medical University, Lucknow, India
Abstract Body:
Background: Elevated serum sLOX-1 levels have shown superior diagnostic accuracy for ACS compared to high-sensitive Troponin-T, particularly within the first hour of symptom onset. However, in regions like India with limited access to emergency medical services, timely arrival at the emergency room is often unfeasible, raising questions about its diagnostic utility.
Methods: We performed a laboratory-based non-randomized comparative diagnostic accuracy study. The target population for this study was all those patients who presented to the ER after 12 hours of onset of symptoms that were suggestive of ACS. Βλοοδ σαμπλεσ ωερε χολλεχτεδ υπον αδμισσιον, ανδ αλλ πατιεντσ υνδερωεντ χοροναρψ ανγιογραπηψ. Patients with stable angina were taken as controls, while those with ACS were taken as cases. For sub-group analyses, we further classified ACS patients into ST elevated-ACS and non-ST-elevated-ACS. Quantification for sLOX-1 was done by sandwich ELISA.
Results: The study comprised 82 participants, predominantly male (74%), with a mean age of 58±9 years. STEMI and NSTEMI-ACS were observed in 20 and 38 patients, respectively, while the control group included 24 individuals. Demographic characteristics and comorbid conditions were comparable across all groups. The levels of sLOX-1 were also comparable across all groups. Multivariate ROC analysis demonstrated higher sensitivity (62.5% vs 50%) and specificity (86% vs 43%) of sLOX-1 compared to hs-TnT in diagnosing NSTEMI-ACS. However, sLOX-1 showed comparable results to CK-MB. On the other hand, when diagnosing STEMI-ACS, hsTnT and sLOX-1 demonstrated comparable sensitivity (71.4%), while CK-MB had the highest sensitivity (85.7%). For specificity, hs-TnT and CK-MB had similar and higher results compared to sLOX-1 (60% vs 40%).
Conclusion: The study emphasizes the potential of sLOX-1 as a diagnostic marker for non-ST-elevation scenarios, given its promising sensitivity and specificity, while elevated CK-MB levels characterize ST-elevation cases.

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 30
Category: Ischemic Heart Disease

Title: EFFICACY AND SAFETY OF A NEW FIXED DOSE COMBINATION OF AZILSARTAN AND CHLORTHALIDONE WHEN COMPARED AGAINST A FIXED DOSE COMBINATION OF OLMESARTAN AND HYDROCHLOROTHIAZIDE IN INDIAN PATIENTS WITH STAGE 2 ESSENTIAL HYPERTENSION

Author Block: Shubhadeep Sinha, Sreenivasa Chary Sriramadasu, Pankaj Thakur, Mohan Reddy Bandi, Srinivas Reddy Devireddy, Hetero Labs Limited, Hyderabad, India

Abstract Body:

Background: Multidrug therapy provides higher efficacy in treating stage II essential hypertension by ensuring improved medication adherence and complementary, synergistic action. Treatment guidelines such as JNCVIII, American College of Cardiology, American Heart Association, European Society of Cardiology etc., have recommended the usage of combination therapy either given together or a single pill for the control of blood pressure and preventing adverse cardiovascular events. Hetero Labs developed a new Fixed Dose Combination (FDC) of azilsartan and chlorthalidone in India. To establish the clinical benefit, a Phase 3 clinical study was conducted where efficacy and safety of the FDC was compared versus the approved FDC of olmesartan and hydrochlorothiazide.

Methods: This was a prospective, multicenter, randomized, active-controlled, comparative study. Safety and efficacy of FDC of azilsartan 40 mg and chlorthalidone 12.5/25mg was compared against olmesartan 20/40mg and hydrochlorothiazide 12.5/25mg in 346 Indian patients with essential hypertension over 12 weeks. Primary endpoint was the change in mean trough sitting clinic systolic blood pressure (scSBP) at the end of week 12. Secondary endpoints were change in mean trough sitting clinic diastolic blood pressure (scDBP), change in 24-hour mean ambulatory systolic blood pressure (maSBP), diastolic blood pressure (maDBP), percentage of responders at the end of week 4, 8 and 12.

Results: Mean scSBP at the end of week 12 was 128.7 mm of Hg in azilsartan and chlorthalidone group compared to 128.9 mm of Hg in olmesartan and hydrochlorothiazide group. The difference in mean trough scSBP at end of week 12 was -0.10mm of Hg (p=0.7923) and lower bound of the one sided 95% CI (-1.9) lies within non-inferiority margin of -5.3. The difference in mean scDBP, 24-hour maSBP, maDBP and safety were comparable between two groups.

Conclusion: The anti-hypertensive effect and safety of azilsartan (40mg) and chlorthalidone (12.5/25 mg) combination is comparable with olmesartan 20/40mg and hydrochlorothiazide 12.5/25mg in Indian patients with stage 2 essential hypertension.

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 31

Category: Ischemic Heart Disease

Title: MACROALBUMINURIA AND NOT MICROALBUMINURIA AND EGFR LESS THAN 60ML/MIN ARE ASSOCIATED WITH ASCVD AND HF IN INDIAN T2D PATIENTS WITH CKD: RESULTS FROM THE CITE INITIATIVE.

Author Block: SAMIT GHOSAL, Binayak Sinha, Ajay Kumar, Kalyan Kr Gangopadhyay, Krishna G. Seshadri, Subir Ray, Anirban Mazumdar, Angshuman K. Bhattacharjee, Banshi Saboo, Purvi Chawla, Manoj Chawla, Sruti Chandrasekharan, Jganmohan Balaji, Sudip Chatterjee, Sonali Patange, Nilakshi Deka, Arundhati Dasgupta, Arvind Gupta, Sanjay Reddy, Sambit Das, Subyajyoti Ghosh, Surekha T, Chitra Selvan, Subhadra P, CITE study, Nightingale Hospital, Kolkata, India, Park Clinic, Kolkata, India

Background: Chronic kidney disease (CKD) in type 2 diabetes (T2D) is considered an independent risk factor for atherosclerotic cardiovascular disease (ASCVD), and heart failure (HF). The CKD in Indian T2D patient evaluation (CITE) initiative was undertaken to assess the relationship between CKD and co-morbidities associated with T2D

Methods: A multi-centre (33 centres), cross sectional, prospective study was conducted to assess the relationship between co-morbidities associated with T2D with CKD. Three distinct patterns of CKD were included for the analysis (CKD A: eGFR <60 ml/min without albuminuria, CKD B: albuminuria with eGFR ≥60 ml/min, and CKD C: eGFR <60 ml/min and albuminuria). A descriptive and multivariate logistic regression analysis was undertaken to assess the odds of co-morbidities in patients with CKD.

Abstract Body: **Results:** The analysis was conducted on 3,326 T2D patients with CKD. In patients with T2D and CKD, 19.64% had ASCVD and 5.02% HF. Multivariate logistic regression analysis indicated increased odds of heart failure and ASCVD with CKD C. Compared to an eGFR ≥60, there was an increased odds of heart failure (OR 4.06, 95% CI 2.74-6.01), and ASCVD (OR 1.65, 95% CI 1.38-1.98) with eGFR <60 ml/min. However an increased odds for HF (OR 1.99, 95% CI 1.44-2.76), and ASCVD (OR 1.32, 95% CI 1.09-1.6) was seen with macroalbuminuria, and not with microalbuminuria. (Figure 1)

Conclusion: Increased odds of HF and ASCVD is seen with advanced CKD (C), with an eGFR <60 ml/min and macroalbuminuria.

Variable	Coefficient B	OR	95% CI	P-value
CKD category C				
HF	1.13	3.09	2.19-4.36	<0.001
ASCVD	0.49	1.63	1.36-1.95	<0.001
eGFR <60 ml/min				
HF	1.4	4.06	2.74-6.01	<0.001
ASCVD	0.5	1.65	1.38-1.98	<0.001
Macroalbuminuria [[UACR >300 mg/g]				
HF	0.69	1.99	1.44-2.76	0.004
ASCVD	0.28	1.32	1.09-1.60	<0.001

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 32
Category: Ischemic Heart Disease
Title: AN INTRIGUING CASE OF CORONARY MULTIVESSEL INSTENT RESTENOSIS
Author Block: Shaheer Ahmed, KARAN KALANI, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

Background: Instent restenosis is the Achilles heel of percutaneous coronary intervention. A lot of factors influence the occurrence of ISR

Case: A man in his 50s, ex-smoker, and non-diabetic presented with complaints of rest angina for the past week. He had a history of NSTEMI one year prior. Coronary angiogram revealed triple vessel disease. After a heart team discussion, he underwent PCI to RCA, LAD, and OM, with a total of 4 drug-eluting stents. ECG showed ST depression in V4-V6, II, III, and aVF. Troponin I was elevated, and LV function was normal. A coronary angiogram revealed significant in-stent restenosis in all three vessels, including total occlusion of the right coronary artery.

Decision-making: Given the aggressive ISR of all 3 vessels in with DES in 1.5 years, we decided to work up for the cause of ISR before proceeding with intervention. LDL was 164 mg/dl, and ESR was 75 mm/hour. Hence, suspected inflammatory vasculitis causing accelerated CAD. PET scan revealed diffuse metabolic activity in ascending, arch and descending aortas, common carotid artery, common femoral artery and brachial arteries. IGG4 and ANCA were negative. CT Aortogram showed features suggestive of atherosclerosis and absence of vessel wall thickening. Inflammation is explained by accelerated atherosclerosis, as uptake did not follow any pattern of any large vessel vasculitis. Given elevated LDL and evidence of vascular inflammation, he was started on Atorvastatin 80 mg, Ezetimibe 10 mg and Colchicine 0.5 mg BD. It was decided to perform PCI of RCA as it was totally occluded and to stage PCI of other vessels once inflammation was controlled. At three months, LDL was 46 mg/dl, and ESR was 26 mm/hr. As the inflammatory markers were normalized and LDL was in the target range, the patient was taken up for PCI of LCX and LAD. To our surprise, LAD and LCX lesions had regressed, and hence PCI was deferred.

Conclusion: The best treatment for ISR is prevention, done by stent optimization and management of associated risk factors. Atherosclerosis-related inflammation may be the etiology for diffuse ISR in which anti-inflammatory drugs might reverse it

Abstract Body:

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 33

Category: Ischemic Heart Disease

Title: SGLT2INHIBITORS IN ACUTE CORONARY SYNDROME POST-PCI: A SYSTEMATIC REVIEW AND NETWORK META ANALYSIS

Author Block: Krishna Tiwari, Muhammad Aaqib Shamim, Vikas Kumar Tiwari, Aswini Saravanan, Abhishek Anil, PRADEEP DWIVEDI, Surjit Singh, Surender Deora, Shoban Babu Varthya, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, JODHPUR, India

Abstract Body:

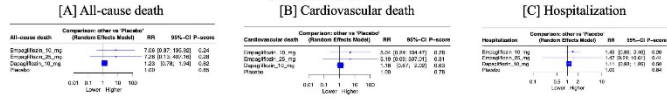
Background: Sodium-glucose cotransporter 2 inhibitors (SGLT2i) are widely used in diseases within the cardiovascular- kidney-metabolic disorder. It has also been tried for acute coronary syndrome (ACS). Thus, we assessed the comparative efficacy and safety of different SGLT2i in ACS patients post percutaneous coronary intervention (PCI) via a systematic review and network meta-analysis (SR-NMA).

Methods: We conducted a comprehensive literature search in PubMed, Scopus, and CENTRAL till 2024/04/18, to answer the above research question using randomized controlled trials (RCTs). We conducted a primary frequentist random-effects NMA and a sensitivity Bayesian analysis. We assessed study quality using the RoBv2.0 and rated the evidence quality using the GRADE framework.

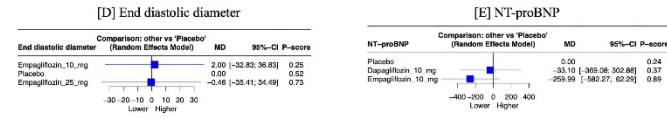
Results: We identified 6 RCTs with 4,837 participants assessing SGLT2i post-MI. There is no difference in all-cause death with dapagliflozin 10 mg [Risk ratio (RR): 1.23, 95% CI: 0.78-1.94], empagliflozin 10 mg [RR 7.06; 0.37-135.92], and empagliflozin 25 mg [RR 7.26; 0.13-407.16] compared to placebo. There is no difference in clinical outcomes (cardiovascular mortality, hospitalisation), end diastolic diameter, and NT-proBNP **[Figure 1]**. There is very low certainty for majority outcomes.

Conclusion: There is a lot of uncertainty and imprecision (with very wide confidence intervals) in the effect of SGLT2i post-MI. Hence, more large RCTs with longer follow-up can contribute to higher-quality evidence.

CLINICAL OUTCOMES



SURROGATE OUTCOMES



Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 34
Category: Ischemic Heart Disease

Title: OPTICAL COHERENCE TOMOGRAPHY GUIDED PERCUTANEOUS CORONARY INTERVENTION WITH STENT COMPARED WITH ANGIOGRAPHY GUIDED PERCUTANEOUS CORONARY INTERVENTION WITH STENT IN PATIENTS WITH CORONARY ARTERY DISEASE

Author Block: Sfurti Jadhav, DR DARSHAN MANOHAR BIRADAR PATIL, Venkatesh Krishnamurthy Tekur, GIRISH NAVASUNDI, APOLLO HOSPITAL, BANNERGHATTA ROAD, Bengaluru, India

Abstract Body:
Background: Optical coherence tomography (OCT) provides high-resolution images for assessing lumen dimensions and detecting the pathology and guiding through percutaneous coronary intervention (PCI). Studies have shown OCT was not superior to angiography.
Methods: Prospective observational study conducted in South India from September 2018 to June 2020 including 128 patients - 64 underwent angiography guided PCI (group A) and 64 underwent OCT guided PCI (group B). Follow up angiography and OCT were done at 6 months in respective groups. Primary objective was to compare occurrence of major adverse cardiovascular events (MACE-death, myocardial infarction, target lesion failure) at the end of six months. Secondary objective was to study procedural MACE, occurrence of death, myocardial infarction (MI), target lesion failure, target vessel myocardial infarction, revascularization at 6 months.
Results: Mean age of patients in group A and group B was 57±13 years and was 59 ±15 years respectively. In group A, dyslipidemia was higher whereas group B had higher diabetes mellitus, hypertension and cigarette smoking & presentation as MI. The procedure time and contrast usage was higher in group B (p<0.0001). Parameters like number of stents per lesion, stent length & maximum stent diameter were similar. In final result, acute lumen gain, minimum lumen diameter and TIMI flow had were similar in both groups. Untreated major dissections were more common in group A. Procedural MACE was not significantly different between both groups (p>0.05). Primary objective was similar in both groups (p >0.05).
Conclusion: Both angiography and OCT are equally effective in improving outcomes. OCT could be considered for lumen assessment and stent-related morphology in more complex cases in which angiography remains uncertain.

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 36
Category: Ischemic Heart Disease

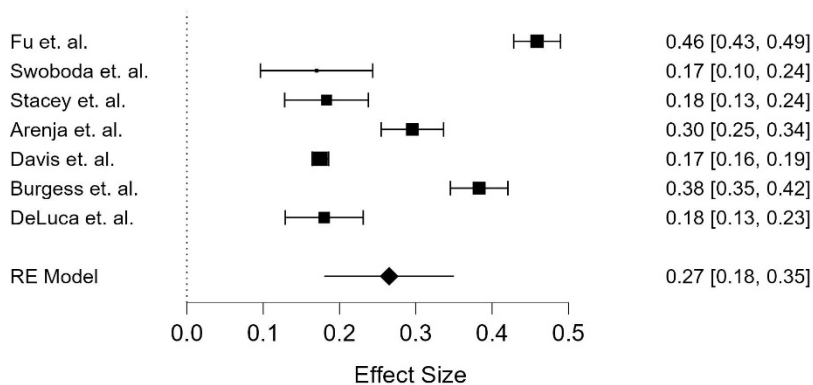
Title: EXPLORING THE SILENT THREAT: PREVALENCE AND RISK FACTORS OF SILENT MYOCARDIAL INFARCTION IN TYPE 2 DIABETES MELLITUS PATIENTS WITHOUT CARDIOVASCULAR DISEASE HISTORY: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Siddhant Govekar, Abhilasha Singh, Rohan Jaggi, Arnav Ranjan, Namrata Gaur, All India Institute of Medical Sciences(AIIMS), Rishikesh, India

Background: Silent myocardial infarction (SMI) is characterized by ECG evidence of myocardial infarction(MI) without typical symptoms. SMI poses an increased risk of mortality in Type 2 Diabetes Mellitus(T2DM) patients. Understanding the prevalence and risk factors of SMI in this population is crucial for its timely diagnosis and prevention of long-term sequelae.

Methods: Literature search using ‘ (“silent myocardial infarction” OR “silent myocardial ischemia”) AND (“ diabetes”)’ was conducted in PubMed(n=310), Scopus(n=382) and Embase(n= 547). Studies (n=1239) were imported into EndNote X9 library and duplicates (n=347) were removed. Through screening of title and abstract, n=712 studies were excluded. n=180 full texts were retrieved and assessed for eligibility. Additional relevant articles were searched through manual screening of reference lists. Statistical analysis was conducted using JASP 0.16.4.0 software.

Abstract Body: **Results:** The systematic review included n=12 studies comprising 20,598 T2DM patients. Meta-analysis of 7 studies revealed a pooled prevalence of 27%(95% CI: 0.18 - 0.35; I²=97%) for SMI in T2DM patients. SMI accounted for 35% of all MI episodes. Increase in fasting glucose levels by 25mg/dl elevated SMI risk by 8%. Male gender, duration of diabetes, and neuropathy were associated with increased risk of SMI.



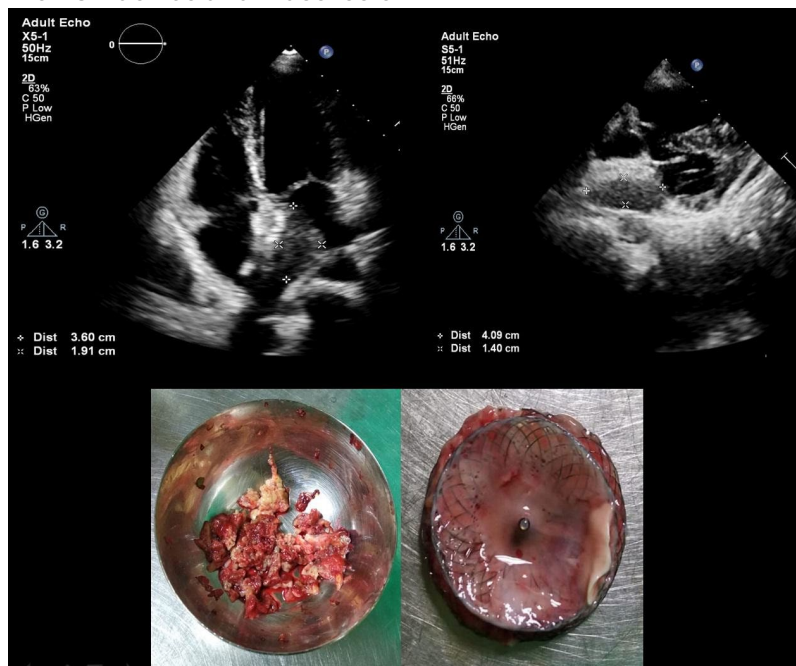
Conclusion: A high prevalence of SMI was found among T2DM patients, emphasizing the need for stricter glycemic control, routine check-ups, and greater awareness about SMI.

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 37

Category: Multimodality Imaging
Title: DIAGNOSTIC DILEMMA : A CHALLENGING CASE OF "VERY LATE" ASD DEVICE RELATED MASS

Author Block: Arif Mohammed, Praveen Satheesan, Vallikkattu V. Radhakrishnan, mathew iype, Sunitha Viswanathan, Department of Cardiology, Government Medical College, Thiruvananthapuram, Kerala, India

Background: Very late ASD Device related mass lesions have been rarely reported with possible differential including Device endocarditis or thrombus.
Case: A 16-year-old girl with history of ASD closure 10 years ago presented with syncope, fever, anemia, and elevated inflammatory markers. Echo showed 4 x 1.5 cm mass associated with the ASD device occupying the LA. Differential of Late ASD Device Infective Endocarditis and Device Thrombus was considered. Blood cultures identified Enterococcus. Despite antibiotics and anticoagulation, the lesion increased in size. She underwent surgical removal of the ASD device and mass lesion.



Abstract Body:

However, histopathology report was inconclusive. She returned nine months later with symptoms of dyspnea, loss of weight and appetite. Echo revealed a large mass lesion from the IAS involving the entire LA and part of RA. Cardiac MRI confirmed the mass but suggested histopathological confirmation. During surgery the lesion had extensively eroded into the Pulmonary veins and Posterior Pericardium, with difficult dissection and she succumbed. Histopathology confirmed malignant nature of lesion with tumor cells positive for CD31, diagnostic of Cardiac Angiosarcoma.

Decision-making: The ASD Device could have been either an innocent bystander or the primary carcinogen. This is the First ASD Device associated Cardiac Angiosarcoma reported in literature.

Conclusion: Case complexity underscores need for comprehensive diagnostics: imaging, pathology, immunohistochemistry.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 38

Category: Prevention and Health Promotion

Title: HOW SMART ARE WE REALLY: A CASE OF USING SMARTWATCH DATA IN AN OUT-OF-HOSPITAL CARDIAC ARREST

Author Block: Beani Forst, Christopher Kanaan, Kieran Lee, Win-Kuang Shen, Kwan S. Lee, Mayo Clinic, Phoenix, AZ, USA

Background: 224.31 million people worldwide wear smartwatches but the rhythm technology continues to be underutilized as a diagnostic tool in clinical settings.

Case: A 47-year-old male with no past medical history presented as a witnessed out-of-hospital cardiac arrest. The patient had been out running with his partner when he began to feel light-headed and nauseous and shortly thereafter became unresponsive. EMS arrived 8 minutes later but no bystander CPR had been initiated. The rhythm was ventricular fibrillation (VF) on EMS arrival whereby he was defibrillated and ROSC was achieved. The patient was wearing a smartwatch through the event and the data was collected and reviewed (Fig 1).

Abstract Body: **Decision-making:** Access to this data enabled delineation of a timeline of events that lead to the patient's arrest. At the time of initiation of his workout, heart rate (HR) was 82 and increased appropriately. At the reported time of symptom onset, the HR increased to above 200. In the absence of EMS tracings, we could pinpoint the most likely timing of VF onset. This information was used in conjunction with his post-arrest EKG and presenting labs to determine whether emergent catheterization was warranted.

Conclusion: Though not a replacement for ambulatory rhythm monitoring, smartwatch based single-lead ECG application has the ability to detect malignant ventricular arrhythmias. Their diagnostic utility continues to expand, offering clinicians a wealth of information that can be used to aid in critical decision making.

[Summary](#)

Heart Rate

[Add Data](#)

H | D | W | M | 6M | Y

RANGE

82-210 BPM

Today, 8:30-9:30 AM



Workout **90-210 BPM**

[Show More Heart Rate Data](#)

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 40

Category: Prevention and Health Promotion

Title: DIGITAL HOME BASED CARDIAC REHABILITATION - LESSONS LEARNT AND IMPACT

Author Block: ALBEN SIGAMANI, Numen Health from Anantam Technologies, Bangalore, India

Abstract Body:

Background: The International Council of Cardiovascular Prevention and Rehabilitation (ICCPR) revealed a concerning disparity in the availability of cardiac rehabilitation (CR) services for ischemic heart disease (IHD) patients. Only one spot is found for every 360 IHD patients annually, highlighting a significant shortage in CR facilities in India, particularly in the northern part of the country. Grade 1A evidence supports that CR should be recommended to all patients following a coronary intervention or acute coronary event. This strong recommendation underscores the effectiveness and benefits of cardiac rehabilitation in reducing the risk of future cardiovascular events, improving cardiovascular health, and enhancing overall well-being. Digital home-based cardiac rehabilitation (CR) is a promising solution for addressing the widening gap in CR services. Leveraging technology to deliver comprehensive CR services to patients in their homes, overcoming barriers such as limited access to traditional CR facilities.

Methods: Numen Health, established in late 2022, offers digital health promotion services via mobile phone. These include customised sessions in Yoga, Diet, Physiotherapy, Medication Adherence, Psychological counselling, and on-demand doctor consultations for symptoms. The platform follows ACC-AHA Joint Recommendation in Digital CR

Results: **Since late 2022, 86,271 patients have been enrolled on CR.** 25070 (29.05%) subscribed to the complete program with over 92% (95%CI 77-99) adherence to program tasks, averaging 31(95% CI 27 - 38) sessions per month, **80% completing on average 150 days** of the program. Patient Reported Outcomes Measures - EQ-5D and Seattle Angina Questionnaire (SAQ) had over 68% improvement at day 90. Physician recommendation, early enrollment after event/hospital discharge and multimorbidity positively increased participation and level of engagement

Conclusion: A digital health platform complements access to cardiac rehabilitation, leading to increased referral, enrollment and active participation. Efforts are needed to increase awareness about CR among doctors, hospitals and patients in India.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 41
Category: Prevention and Health Promotion
Title: SIMPLE-MI - LESS LABS, MORE HEART: ASSESSING MYOCARDIAL INFARCTION RISK IN PATIENTS WITH CHEST PAIN FOR RESOURCE-LIMITED SETTINGS
Author Block: Kahan S. Mehta, Meenakshi Shah, Maurya Joshi, Jugal Bhatt, Nancy Kagathara, Jay Shah, Varsha Godhbole, GMERS Medical College and Hospital, Vadodara, India

Abstract Body:

Background: Timely identification of myocardial infarction (MI) plays a crucial role in optimizing patient outcomes, particularly in resource-limited settings. The present study introduces the SIMPLE-MI (Simple Myocardial Infarction Prediction using Limited Evaluation) scoring system, designed to harness accessible physical findings and minimal laboratory tests for effective early prediction of MI.

Methods: A prospective study was conducted over a 2 year period, involving 310 patients presenting with chest pain. The SIMPLE-MI system incorporates six parameters: Systolic Blood Pressure (S), Ischemic pain Symptoms (I), Myocardial Biomarkers (M) assessed via Troponin levels, Pulse Rate (P), Age (L), and ECG Findings (E). Associations with MI were evaluated through odds ratios, 95% confidence intervals, and p-values. The system's performance in predicting MI risk was assessed in patients presenting with chest pain.

Results: Among the parameters, elevated troponin levels, ST-segment changes on the electrocardiogram (ECG), and ischemic symptoms demonstrated significant associations with MI occurrence ($p < 0.001$). Notably, elevated troponin levels exhibited an odds ratio of 8.5 (95% CI: 5.3 - 13.6), while ECG changes showed an odds ratio of 11.2 (95% CI: 6.4 - 19.7). Ischemic symptoms were associated with an odds ratio of 2.9 (95% CI: 1.8 - 4.7). The total SIMPLE-MI Score exhibited a robust dose-response relationship with MI risk, with higher scores correlating to increased odds of MI ($p < 0.001$).

Conclusion: The study establishes the efficacy of the SIMPLE-MI scoring system as a valuable tool for early MI risk assessment in resource-limited settings. Through the integration of accessible parameters and minimizing reliance on extensive testing, the system facilitates rapid risk evaluation and informed clinical decision-making. Prospective studies are warranted to further validate its accuracy and applicability across diverse clinical scenarios. The "Fewer Labs, More Heart" approach reflects the system's potential to optimize patient care despite resource constraints.

Session Title: **Sunday Poster Session**

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 42

Category: Prevention and Health Promotion

Title: ROLE OF SERUM CHLORIDE LEVEL IN ACUTE DECOMPENSATED HEART FAILURE: A PROSPECTIVE SINGLE-CENTER COHORT STUDY

Author Block: Kahan S. Mehta, Maurya Joshi, Vraj Bhatt, Sunidhi Rohatgi, Jay Shah, Meenakshi Shah, Varsha Godhbole, GMERS Medical College and Hospital, Vadodara, India

Abstract Body:

Background: Acute decompensated heart failure (ADHF) is a major cause of hospitalization and death. Electrolyte imbalances are among the many factors that contribute to ADHF's pathophysiology. One such electrolyte, serum chloride, has been suggested to be involved in ADHF's development and progression. Nonetheless, the exact role of serum chloride in ADHF is still not fully understood. Here we will investigate the effect of admission serum chloride levels on the duration of hospital stay in decompensated heart failure patients and their correlation with serum sodium levels.

Methods: This is a prospective single-center observational cohort study carried out at a tertiary care center from March 2023 to March 2024 in western India using case record forms.

Results: In the present study, 180 patients were included. It was observed that serum chloride level was less than 96mEq/L in 40%, 96 to 101mEq/L in 35%, and more than 101mEq/L in 25%. We observed that ischemic heart disease was significantly associated with hypochloreaemia (75% vs 61.9% and 20%), p-value < 0.01. On multivariate regression, potassium and ejection fraction positively correlated with serum chloride level and blood urea nitrogen, length of hospital stay and NT proBNP had an inverse correlation with serum chloride levels.

Conclusion: According to our research, a significant number of patients suffering from acute decompensated heart failure had hypochloremia, with 60% of them having serum chloride levels below 96mEq/L. We found that hypochloremia was linked with ischemic heart disease these results have important implications for the management and treatment of ADHF.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 43
Category: Prevention and Health Promotion
Title: RARE RECURRENT RHEUMATIC FEVER AT 53
Sivakumar Ganesan, J.M. Ravichandran Edwin, Balachandran C, Viswanathan T, Selvakumaran M S, Manikandan Ramanujam, Thirulogachandar Elayaperumal, Antoprabhu Rosari, Tirunelveli Medical College Hospital, Tirunelveli, India

Author Block:

Background: Acute or Recurrent Rheumatic Fever occurrence is rare in Older Adults. Here we present a case of occurrence of recurrent Rheumatic Fever at the Age of 53 Years.

Case: A 53 year old man with Previous Diagnosis of RHD - Severe Mitral Stenosis with Moderate Aortic Regurgitation who underwent Closed Mitral Commissurotomy at the age of 28 years at 1999 and had skipped intramuscular penicillin regimen 15 years before, referred to our Cardiology OPD, with History of High grade Fever and Joint swelling with pain in Multiple Joints. On Evaluation during hospitalisation, Patient fulfilled High Grade Fever (Upto 102 F multiple times), History of Additive Polyarthritis started with Left Ankle, then Right Ankle, and further involving Both Knees and Wrists with pain in both shoulders with ongoing increase in Joint swelling during Hospital stay. Patient had Increased ASO Titre (479 IU/ml), ESR (140 mm/hr) and CRP (99 mg/L).

Abstract Body: **Decision-making:** Having fulfilled Revised Jones criteria for Recurrent Rheumatic fever with One Major and Two Minor criterias plus Elevated ASO Titre, patient was given one dose of Intramuscular Benzathine Penicillin to eradicate the lingering GAS and initially started on High dose Aspirin. As patient was not responding, 1 mg/kg/day Oral Prednisolone was added to the regimen. Patient Immediately responded. Fever responded well and Joint symptoms & signs subsided. Echocardiogram did not show any new evidence of Valvulitis except new development of Moderate Aortic Stenosis and reoccurrence of Severe MS along with Preexisting Moderate Aortic regurgitation. Repeat values over next two weeks showed dramatic decrease in ESR and CRP with ASO becoming negative (implying less than 200 IU/ml). Patient responds well to tapered corticosteroids and tapering Aspirin Dose. Patient is scheduled for next visit for Intramuscular Benzathine Penicillin once in Three weeks.

Conclusion: Though rare in older adults, Diagnosis of Recurrent Rheumatic Fever should be considered in the differential diagnosis in appropriate clinical situations in Higher prevalence countries like India.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 45
Category: Prevention and Health Promotion

Title: PREVALENCE OF OBESITY AND HYPERTENSION IN INDIAN UNIVERSITY STUDENTS: IMPLICATIONS FOR CARDIOVASCULAR HEALTH AWARENESS AND EDUCATION

Author Block: Kahan S. Mehta, Maurya Joshi, Jugal Bhatt, Nancy Kagathara, GMERS Medical College and Hospital, Vadodara, India

Abstract Body:
Background: Cardiovascular diseases (CVDs) are the leading cause of mortality worldwide, with 17.3 million deaths attributed to them in 2008, accounting for 30% of all global deaths. Hypertension is a major contributor, causing 16.5% (9.4 million) of all deaths annually, with strokes and coronary heart disease being primary outcomes, responsible for 51% and 45% of these deaths, respectively. It is projected that by 2030, CVD-related deaths will rise to 23.3 million. In India, studies have shown a significant prevalence of overweight and obesity among college students (21.8% and 15.7%, respectively), and in the general population, with an age-adjusted obesity incidence of 40%. Additionally, the incidence of coronary artery disease (CAD) and hypertension is notable, at 6.9% and 32.6%, respectively. We aim to investigate the prevalence of obesity and hypertension among University students and their knowledge and attitude toward risk factors of cardiovascular disease (CVD) in India
Methods: A total of 600 male students were selected for the present cross-sectional study and their blood pressure (BP) and body mass index (BMI) were determined, other data was gathered through a questionnaire, and SPSS-16 was used for analyzing data.
Results: Out of 600 students, 7.5% were hypertensive (systolic 2.6% and diastolic 6.3%) while the BMI of 54.6% was in the normal range, 22.8% were overweight 14.7% were moderately obese and 7.9% were severely obese. The majority of the participants considered that smoking, increased fatty food intake, obesity, high BP, and increased LDL-cholesterol levels, are the main causes of CVD. Most of the participants agreed that one should know BP, blood sugar, and serum cholesterol and one should maintain a normal body weight and should do regular exercise. They were also aware that a healthy lifestyle could prevent CVD. However, the majority of the participants were not practicing healthy lifestyles.
Conclusion: □A huge gap exists in the knowledge, attitude, and practice regarding risk factors of CVD among university students.

Session Title: Sunday Poster Session

Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon

Poster Board Number: 46

Category: Valvular Heart Disease

Title: ACUTE PAPILLARY MUSCLE RUPTURE IN ANTI-PHOSPHOLIPID ANTIBODY SYNDROME.

Author Block: Shankar Machigar, Vishal Patil, Satyavan Sharma, Bombay Hospital and medical research center, mumbai, mumbai, India

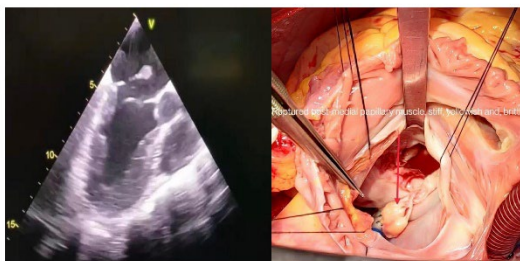
Background: APLAS is a systemic immune disease, associated with a hypercoagulable state, fetal loss, several clinical manifestations including cardiac involvement. PMR is extremely rare in APLAS and majority of reported cases are in relation to pregnancy or puerperium with hemodynamic volume overload precipitating the catastrophe.

Case: A young male presented with Venousthromboembolism (DVT, PE), developed NSTEMI with posterior mitral leaflet rupture, severe MR acute pulmonary oedema and acute kidney Injury in background of APLAS. Trans-esophageal echocardiography demonstrated a flail anterior mitral leaflet and a rupture posteromedial papillary muscle appearing like a thick, detached mobile mass. Managed with Invasive ventilation and diuretics.

Decision-making: Structural heart experts opined percutaneous mitral clip procedure to be too complex, risky and not a durable option due to young age. MVR performed using Onx, mechanical prosthesis. At surgery, postero-medial papillary muscle was ruptured and the remaining 3 were infarcted. Histopathology revealed coagulation necrosis of myocytes consistent with infarction.

Abstract Body:

Conclusion: The exact etiology of PMR was uncertain in this young patient but ischemia seems to have played a major role due to APLAS. Hence the main stay of treatment was strict compliance, immunosuppressants and anticoagulation.



A flail anterior mitral leaflet, failure of leaflet coaptation and a rupture posteromedial papillary muscle appearing like a thick, detached mobile mass.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 47
Category: Valvular Heart Disease

Title: A RARE CASE OF QUADRICUSPID AORTIC VALVE(QAV) ASSOCIATED WITH LEFT VENTRICULAR NON COMPACTION AND AORTIC INSUFFICIENCY: CASE REPORT AND REVIEW OF LITERATURE
Mohammad Ghouse Shaik, Dr Sagar Bhuyar, Dr A. Ravikanth, Dr MRM Babu,

Author Block: Kamineni Academy of Medical Sciences and Research Centre, hyderabad, India

Abstract Body:
Background: The Quadricuspid Aortic Valve (QAV) is an extremely rare congenital defect, with autopic and echocardiographic prevalence rates of 0.008% and 0.043%, respectively. Aortic insufficiency makes it more challenging. The widespread use of Transthoracic echocardiogram(TTE) and Transoesophageal echocardiography(TEE) allows for precise detection of this abnormality
Case: This case report outlines the presentation and evaluation of a 54-year-old female with diabetes and hypertension presenting with NYHA class II shortness of breath for six months. A TTE revealed atypical morphology of the aortic valve, suggestive of possible QAV, along with dilated left ventricle (LV), Left ventricular Non compaction (LVNC) and severe LV systolic dysfunction (LVEF-30%), Severe aortic regurgitation. TEE was conducted, which confirmed the diagnosis of quadricuspid aortic valve. All four cusps were identical in size, thick, and fibrous, and the TEE showed a distinct closure pattern of the cusps, generating an X-shape in diastole and a square-shaped valve opening in systole. Leaflet non-coaptation resulted in severe aortic regurgitation. The LV noncompaction was confirmed by cardiac MRI.
Decision-making: Considering current knowledge of QAV, the clinical case reported is indicative of anatomical characteristics and natural history. Aortic insufficiency was caused by cusps fibrosis, aortic root and ascending aorta were normal, and QAV, the most frequent variety (type A with four equal cusps), was asymptomatic until the sixth decade. Our example demonstrates the usefulness of TTE screening for aortic valve cusp anomalies and the precision of TEE diagnosis in QAV.QAV is often an independent finding, but in our case, it was accompanied with left ventricular noncompaction cardiomyopathy, which is a rare occurrence.
Conclusion: This case underscores the importance of utilizing advanced imaging techniques like TEE to accurately diagnose complex valvular abnormalities such as quadricuspid aortic valve and associated cardiac lesions. Early identification and management are crucial to prevent further complications in patients with associated cardiac dysfunction.

Session Title: Sunday Poster Session
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 48
Category: Valvular Heart Disease
Title: EFFECT OF SGLT-2 INHIBITOR ON INDICES OF ATRIAL MYOPATHY IN CHRONIC RHEUMATIC MITRAL VALVE DISEASE
Author Block: Ankit Bansal, JAMAL YUSUF, ABHISHEK NAGAR, G. B. PANT HOSPITAL, NEW DELHI, India

Abstract Body:

Background: In rheumatic heart disease (RHD), the complex interplay between oxidative stress, inflammation, atrial stretch, and fibrosis leads to atrial structural and electromechanical remodeling and ultimately atrial cardiomyopathy. Non-invasive indicators of atrial electrophysiology and morphology like P wave dispersion (PWD), P-wave terminal force in lead V1 (PTFV1), electro-mechanical coupling interval (EMCI), left atrial (LA) strain and left atrial appendage (LAA) velocity can be used to assess atrial cardiomyopathy. The atrial cardiomyopathy can predispose to the development of atrial fibrillation and thromboembolism. Dapagliflozin by its anti-inflammatory and anti-fibrotic effects can ameliorate atrial remodeling and prevent atrial arrhythmia. However, its role in RHD is unknown.

Methods: A clinical experimental study with pre-post design was conducted on 50 RHD patients with mitral valve disease of moderate severity, who received 10 mg of dapagliflozin for 6 months along with standard therapy. Electrocardiography (ECG), 48-hour ambulatory ECG, and comprehensive echocardiography were done pre- and post-intervention to look for PWD, PTFV1, EMCI, LA strain, LAA velocity, and atrial premature complex burden.

Results: This study found a significant improvement in PWD (45.32 ± 8.513 ms v/s 35.04 ± 9.347 ms, $p < 0.001$), PTFV1 (41.46 ± 11.099 mm-seconds v/s 30.80 ± 10.928 mm-seconds, $p < 0.001$), EMCI (79.84 ± 15.803 ms v/s 70.36 ± 13.130 ms, $p < 0.001$), LAA peak emptying velocity (27.11 ± 10.426 cm/s, v/s 34.142 ± 11.239 cm/s, $p < 0.001$), LA reservoir strain (LASR) (19.380 ± 7.467 , v/s 21.168 ± 8.771 , $p = 0.005$), LA conduit strain (LASCD) (-9.544 ± 5.087 , v/s -10.908 ± 5.761 , $p < 0.001$), LA contractile strain (LASCT) (-8.866 ± 4.0016 , V/S -10.068 ± 3.9947 , $p = 0.005$) and APC burden (0.844 ± 3.185 % v/s 0.143 ± 0.216 , $p = 0.002$) following 6 months of dapagliflozin therapy.

Conclusion: The addition of dapagliflozin to the standard therapy in RHD patients significantly improves P wave indices, atrial electromechanics, LA strain parameters, and APC burden suggestive of anti-arrhythmic and anti-remodeling effects.

Session Title: **Sunday Poster Session**
Session Time: Sunday, August 18, 2024, 11:30 am - 12:00 noon
Poster Board Number: 50
Category: Valvular Heart Disease

Title: INSIGHTS INTO RHEUMATIC HEART DISEASE AWARENESS AMONG SENIOR MEDICAL STUDENTS IN INDIA: A COMPREHENSIVE STUDY EXAMINING THEIR KNOWLEDGE, ATTITUDES, AND PRACTICES (KAP)

Author Block: Maurya A. Joshi, Kahan S. Mehta, Nancy Kagathara, Jugal Bhatt, GMERS Medical College and Hospital, Vadodara, India

Abstract Body:
Background: Rheumatic heart disease (RHD) is the most common cause of valvular heart disease in low and middle-income countries (LMICs). The limited number of cardiologists per patient presents a significant challenge for RHD prevention and management among general practitioners in India. This underscores the importance of assessing the knowledge of senior medical students, who are future doctors, about RHD. Such an assessment could serve as a basis for increasing awareness and reducing the burden of the disease. Therefore, we aimed to evaluate the knowledge, attitudes, and practices (KAP) of senior medical students regarding rheumatic heart disease.
Methods: A cross-sectional study was conducted at four medical schools in India over a period of 3 months (from January 1st to April 1st, 2023). Senior medical students were recruited using a structured self-administered questionnaire and electronic forms. The knowledge level was categorized into tertiles (poor, moderate, and good), while attitudes and practices were classified as poor or good. Associations with KAP were evaluated, and statistical significance was set at $P < 0.05$.
Results: A total of 500 pre-final and final-year medical students (3rd and 4th year) participated in the study. The mean age was 21.6 (SD \pm 1.2) years, with 53.2% of students in the 20 to 23 years-old range. There were more female participants (51.7%). Most students demonstrated moderate knowledge (58.2%), with good attitudes and practices regarding rheumatic heart disease and its prevention. Attendance at lectures on RHD, a history of sore throat, were associated with good knowledge, attitudes, and practices regarding RHD.
Conclusion: Despite the majority of senior medical students (3rd and 4th years) in India having moderate to good knowledge of RHD, only a third demonstrated above-average knowledge. There is a modest level of knowledge regarding RHD, which could serve as a crucial foundation for developing educational programs to enhance awareness and understanding. Approximately 1 in 4 senior medical students demonstrated good knowledge, attitude, and practice regarding RHD.

Session Title: Challenging Clinical Cases in Valvular Heart Disease

Session Time: Sunday, August 18, 2024, 12:00 noon - 12:50 pm

Presentation Number: 38-05

Category: Valvular Heart Disease

Title: QUADRIVALVAR INVOLVEMENT: TRIPLE VALVE RHD ASSOCIATED WITH CONGENITAL VALVAR PULMONARY STENOSIS COMPLICATED BY PULMONARY VALVE INFECTIVE ENDOCARDITIS (IE)

Author Block: Shankar Machigar, satyavan sharma, Bombay Hospital and medical research center, mumbai, mumbai, India

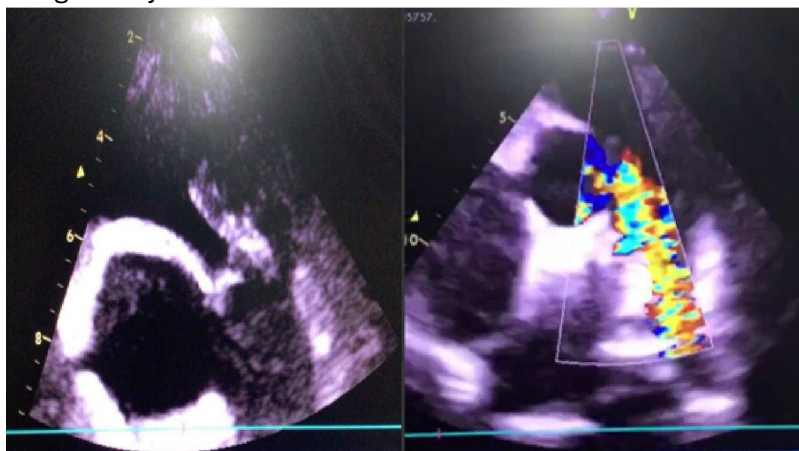
Background: This case highlights rare aspects of valvular heart disease with involvement all four cardiac valves with etiology of mitral, aortic and tricuspid being rheumatic and pulmonary being congenital, and occurrence of PV endocarditis (PVIE).

Case: 45-year-old patient had history of mitral valve replacement (Starr Edwards), aortic valve replacement (Medtronic Hall) was admitted with heart failure, atrial fibrillation and severe tricuspid regurgitation for tricuspid valve (TV) replacement. Pre-operative trans thoracic echocardiogram (TTE) revealed well functional mitral and aortic prosthesis and no regurgitation, TV was thickened, failed to co-apt with annulus of 58 mm and severe TR. Trans-esophageal echo showed no evidence of mitral paravalvular leak. Hemodynamics revealed raised RA, RV, PA pressures with 30 mm gradient across PV suggesting PV stenosis. Right ventriculogram revealed thickened, domed PV with restricted mobility, narrow jet and post stenotic dilatation of main pulmonary artery suggesting congenital, was hitherto undiagnosed.

Decision-making: The course was stormy with high-grade fever, repeated negative cultures, acute kidney injury and multi-organ failure despite higher antibiotics, anti-fungal, ventilatory and inotropic support. Follow-up Bed side TTE revealed a new large mobile mass on PV with regurgitation and led to rare diagnosis of PVIE.

Conclusion: Hospital care PVIE occurred in this chronically sick patient in the background of congenitally deformed PV.

Abstract Body:



Session Title: Challenging Clinical Cases in Valvular Heart Disease

Session Time: Sunday, August 18, 2024, 12:00 noon - 12:50 pm

Presentation Number: 38-07

Category: Valvular Heart Disease

Title: DO NOT MISS THE FOREST FOR THE TREES: A CASE OF VALVULAR HEART DISEASE IN A TEENAGER

Author Block: Shaheer Ahmed, Nikhil Singhania, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India

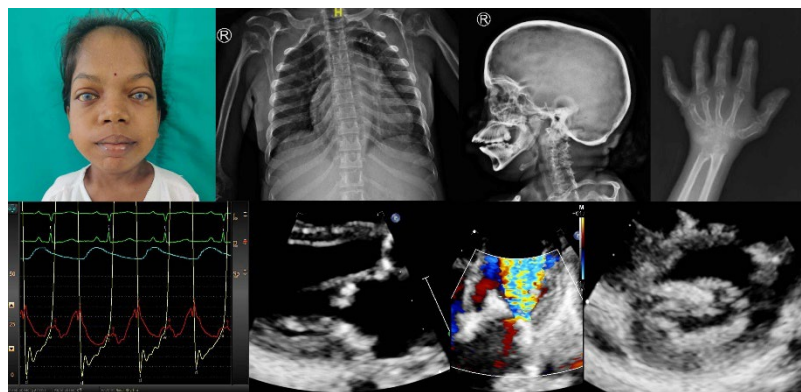
Background: Systematic disorders may have involvement of heart valve and occasionally might be the presenting feature.

Case: A lady in her 20s with dyspnea was diagnosed with rheumatic mitral stenosis elsewhere and was referred for balloon mitral valvuloplasty (BMV). She had disproportionate short stature (121 cm, < 3rd percentile) and coarse facies, raising the suspicion of a systemic disorder with valve involvement. Echocardiography showed diffusely thickened aortic and mitral valves with split commissures.

Decision-making: Subsequent assessment revealed diffuse corneal oedema, skeletal anomalies like prominent lower facial bones, kyphosis, metaphyseal flaring in long bones, oar-shaped ribs, bullet-shaped metacarpals, bilateral hearing impairment and severe osteoporosis. There was a history of similar skeletal abnormalities in her elder sister. A clinical diagnosis of Mucopolysaccharidosis, likely Morquio syndrome, was made. Cardiac catheterisation revealed low cardiac index, elevated LVEDP, mitral diastolic gradient of 9 mmHg and mild PAH. Global longitudinal strain was low (-11%), probably due to myocardial involvement in mucopolysaccharidosis

Abstract Body:

Conclusion: This case illustrates that even in high-prevalence regions, before labelling as RHD, considering diverse causes of valvular disease is crucial. Also, looking at the patient's overall appearance and detailed elucidation of history is very important, and one should not just merely diagnose based on echocardiographic images.



Session Title: Challenging Clinical Cases in Valvular Heart Disease

Session Time: Sunday, August 18, 2024, 12:00 noon - 12:50 pm

Presentation Number: 38-09

Category: Valvular Heart Disease

Title: A CASE OF MULTIPLE CEREBRAL ANEURYSM CAUSED BY LEFT ATRIAL MYXOMA

Author Block: Jona Glory, Perpetual Help Medical Center, Binan, Philippines

Background: Primary cardiac tumors are rare and are usually benign in 80% of cases. Patients also commonly present with cerebral embolic phenomena.

Case: This is the case of a 52 year old female admitted last 2017 due to Transient Ischemic Attack. One year after the index event, the right-sided body weakness recurred with a persistent deficit of 4/5 muscle strength, associated with occasional dizziness and near syncopal attacks. Diagnosed with Cerebrovascular Infarct, Left middle cerebral artery. Her symptoms persisted however lost to follow up. Three months prior to admission she finally sought consult due to increase in severity of symptoms. Physical examination revealed a grade 3/6 low-pitched systolic murmur and a 2/6 diastolic murmur at the 5th ICS left midclavicular line. There was a note of a 4+/5 motor deficit of her right upper and lower extremities. Other parts of the neurologic exam were unremarkable. Plain cranial MRI showed old lacunar infarcts, left thalamocapsular area as well as the presence of fusiform aneurysms at the bilateral middle cerebral arteries and right anterior cerebral artery.

Abstract Body: Transthoracic echocardiography revealed a left atrial mass, attached to the interatrial septum. Transesophageal echocardiography showed a mass consistent with a left atrial myxoma.

Decision-making: She was admitted and underwent pre-operative coronary angiography revealing angiographically normal coronary arteries. Excision of the left atrial myxoma, grossly a reddish and gelatinous mass with a peduncle attached to the fossa ovalis measuring 5cm x 3cm. Histopathologic studies confirmed it to be a myxoma. The post-operative course was uneventful. Cerebral aneurysms were monitored.

Conclusion: Atrial myxomas with cerebral aneurysms are a rare condition with an incidence rate of 6%. After an exhaustive literature review, this is the first case reported in the Philippines. This case report shows the importance of monitoring for neurologic signs and symptoms in patients with left atrial myxomas even after resection. Growth of aneurysms and myxoma recurrence should likewise be monitored on a regular basis. As of writing, there are no clear guidelines on the optimal management of the case.

Session Title: **Electrophysiology Oral Abstract Presentations**

Session Time: Sunday, August 18, 2024, 12:00 noon - 12:50 pm

Presentation Number: 37-05

Category: Electrophysiology

Title: IMPACT OF DURATION OF DIABETES ON ELECTROCARDIOGRAPHIC (ECG) CHANGES IN PATIENTS WITH TYPE 2 DIABETES MELLITUS.

Author Block: Aniket V. Inamdar, Samarpan Clinic, Omerga, India

Background: Hyperglycemia has a role in the development of myocardial dysfunction in diabetic patients. ECG alterations such as sinus tachycardia, long QTc, QT dispersion, changes in heart rate variability and ST-T changes have been observed early in the course of diabetes mellitus. ECG alterations help evaluate cardiac autonomic neuropathy and detect signs of myocardial ischemia even in asymptomatic patients. This study aimed to look at the impact of the duration of diabetes on electrocardiographic changes in patients with diabetes mellitus.

Methods: 200 consecutive diabetic patients were studied. Diabetes mellitus was defined in accordance with American Diabetes Association definition. Patients were divided in two groups based on duration of diabetes < 4 years and ≥ 4 years. Baseline 12 lead ECG, HbA1c and 2D echocardiographic examination were done in all patients. Statistical analysis was performed using T test, modified T test, Mann Whitney test and ANOVA.

Results: Resting heart rate was higher (**p=0.095**), QTc duration was prolonged (p=0.550) in **Abstract Body:** patients with diabetes duration ≥ 4 years. T wave inversions were more common in patients with diabetes duration ≥ 4 years (**p=0.012**).

Conclusion: In this study, we found that the duration of diabetes was strongly associated with T wave inversions in type 2 diabetic patients. Resting heart rate and QTc were also higher in patients with diabetes duration ≥ 4 years. The association between the duration of diabetes and electrocardiographic changes not only suggests that microvascular disease may play a part in the development of decreased left ventricular compliance but also alludes to the role of autonomic deregulation and cardiac fibrosis in the etiology of LV diastolic dysfunction, both well-known consequences of diabetes. Indian study by Pappachan JM et al showed the prevalence of cardiac autonomic neuropathy (CAN) in diabetes mellitus is high (60%). Higher age, longer duration of diabetes, and peripheral neuropathy are significant risk factors. Studying ECG alterations is a simple and cost-effective way of predicting CAN and deadly myocardial ischemia in patients with diabetes mellitus. Early detection and timely treatment will save lives.

Session Title: **Electrophysiology Oral Abstract Presentations**

Session Time: Sunday, August 18, 2024, 12:00 noon - 12:50 pm

Presentation Number: 37-07

Category: Electrophysiology

Title: DEEP LEARNING-BASED MODEL FOR ATRIAL FIBRILLATION PROGRESSION PREDICTION
Peibiao Mai, Yuqi Zhang, [Sijin Li](#), Jintao Han, Yanqing Zhao, Huanji Zhang, Chao Tong, Kun Zhang, The Seventh Affiliated Hospital of Sun Yat-Sen University, Shenzhen, People's Republic of China, State Key Laboratory of Virtual Reality Technology and Systems, Beijing, People's Republic of China

Author Block:

Background: Discrepancies exist in the definition of atrial fibrillation (AF) progression and the methods used to evaluate the medical burden of AF. Traditional epidemiological studies often rely on manual screening methods to develop disease prediction models. In this study, we intend to investigate the factors that impact the clinical classification of AF, and to develop a predictive model using deep learning algorithm for early identification of paroxysmal or persistent AF.

Methods: We collected clinical data from 1600 patients with non-valvular AF. Progression of AF was defined as the transition from paroxysmal to persistent AF. Recursive feature elimination (RFE) and LASSO regression were utilized to determine which factors had a statistically significant effect on the progression of AF. A prediction model for clinical classification of AF was developed using a deep learning approach. The importance of each

Abstract Body: predictor was then analyzed utilizing the SHAP (SHapley Additive exPlanations) method.

Results: The prediction models of AF progression based on the CatBoost, GBM, and XGBoost algorithms all show good prediction performance, with AUC values of 0.880, 0.872, and 0.865. Among them, the variables LA and NT-proBNP are the main decision factors for machine learning model prediction, and other features such as UA, Hb, and LVEF are also important reference features for model prediction. The results of subgroup analysis showed that the contributions of the above indicators to the model changed in different age and gender groups.

Conclusion: The predictive model developed in this study can be utilized to discern the disease progression phase in patients with newly diagnosed AF. Tailoring individualized treatment strategies based on this predictive model may help to realize early-stage management and treatment, ultimately leading to improved clinical outcomes.