

ACC Asia Together With KSC Spring Conference Abstracts and Cases

Friday, 17 April 2026

Session

Coronary Interventions and Ischemic Heart Diseases Oral Abstracts

Title:

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: OPTIMIZING THE USE OF INTRAVASCULAR IMAGING-GUIDED PCI: A DATA-

DRIVEN APPROACH VALIDATED IN THE IVUS-XPL AND OCCUPI TRIALS

Author

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Block:

Informatics, Yonsei University College of Medicine, Seoul, South Korea, Division of Cardiology, Severance Cardiovascular Hospital, Yonsei University College of Medicine, Seoul, South Korea

Background: Although intravascular imaging (IVI)-guided PCI improves outcomes, identifying which patients benefit over angiography guidance remains challenging. We developed a model to optimize PCI strategy based on post-procedural minimal lumen diameter (post-MLD).

Methods: We developed a model to predict the individual treatment effect of IVI guidance, defined as the predicted gain in post-MLD compared with angiography guidance. The model was derived (n=2,754) and validated (n=1,854) using data from Severance Hospital. External validation used patient-level data from two RCTs: IVUS-XPL and OCCUPI. Patients with post-MLD gain >0.1 mm were classified as higher predicted benefit (HPB) group. We evaluated whether the model-predicted strategy reduced the risk of primary endpoint in each trial within the HPB group.

Abstract

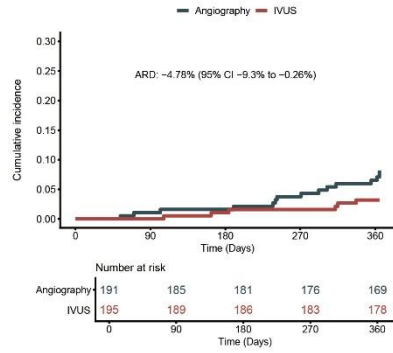
Body:

Results: The model showed robust performance, with MAE 0.2 mm in internal validation and IVUS-XPL, and 0.32 mm in the OCCUPI. Applying the 0.1 mm threshold, 386 patients (28.8%) in IVUS-XPL and 838 patients (53.2%) in OCCUPI were identified as HPB group. In the IVUS-XPL, IVI guidance significantly reduced the risk of primary endpoint compared with angiography guidance within the HPB group (absolute risk difference [ARD] -4.78% [-9.30 to -0.26%]). This was replicated in the OCCUPI (ARD -3.52% [-6.79 to -0.25%]).

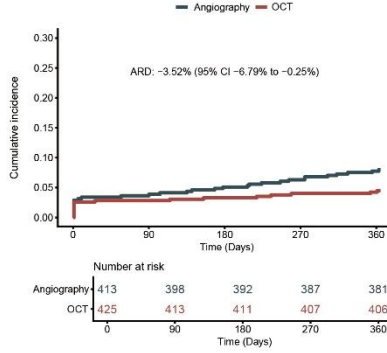
Conclusion: Our model identifies patients who derive benefit from IVI guidance. This personalized approach to optimizing PCI strategy translates into improved long-term outcome.

(A) 1-year Kaplan–Meier curve for each trial's primary endpoint in the higher predicted benefit group

IVUS–XPL trial

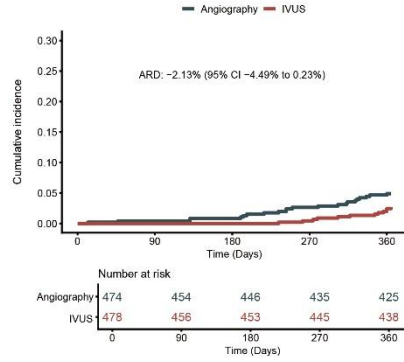


OCCUPI trial

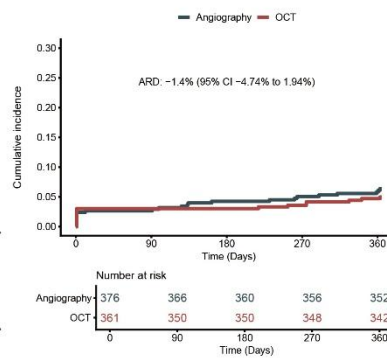


(B) 1-year Kaplan–Meier curve for each trial's primary endpoint in the lower predicted benefit group

IVUS–XPL trial



OCCUPI trial



Session Title: **Coronary Interventions and Ischemic Heart Diseases Oral Abstracts**

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: THE ROLE OF PHARMACOLOGICAL COCKTAILS IN PREVENTING RADIAL ARTERY SPASM AND COMPLICATIONS DURING PERCUTANEOUS CORONARY INTERVENTION

Author Block: Sherzod Mamatkarim o'g'li Ahmedov, Ezgu Niyat, Tashkent, KY, Uzbekistan, Carmen+, Buxara, KS, Uzbekistan

Background: Radial artery spasm (RAS) during percutaneous coronary intervention (PCI) can reduce procedural success, increase patient discomfort, and occasionally lead to procedural failure. Pharmacological cocktails including vasodilators, calcium channel blockers, and anticoagulants have been proposed to prevent RAS and improve both procedural and post-procedural outcomes.

Methods: In this prospective observational study, 900 patients undergoing elective PCI were randomly assigned to a Cocktail Group (n=450) receiving intra-arterial nitroglycerin 100 mcg, verapamil 2.5 mg, and heparin 5000 IU, or a Control Group (n=450) without the cocktail. Radial artery patency and blood flow were evaluated by Doppler ultrasonography on the day following PCI. Pain and spasm severity were recorded using a visual analog scale (VAS) immediately after the procedure and the next day. Procedural success, hematoma, and radial artery occlusion (RAO) were monitored.

Results: The incidence of RAS was significantly lower in the Cocktail Group (5 percent) compared to the Control Group (20 percent, p less than 0.001). Procedural success was higher in the Cocktail Group (98 percent vs 90 percent, p less than 0.01). Radial artery patency assessed by Doppler was 99 percent versus 92 percent, and RAO occurred in 1 percent versus 5 percent of patients, respectively. The Cocktail Group also showed higher peak systolic velocity, higher end-diastolic velocity, and lower flow resistance, with no significant arterial wall thickening observed. ith no significant arterial wall thickening.

Conclusion: Intra-arterial pharmacological cocktails with nitroglycerin, verapamil, and heparin significantly reduce RAS, improve procedural success, and minimize complications such as RAO and hematoma. These findings

Abstract Body:

support routine use of pharmacological cocktails during PCI to enhance patient safety and procedural efficiency.

Session Title: **Coronary Interventions and Ischemic Heart Diseases Oral Abstracts**

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: COMPARATIVE EFFECTIVENESS AND SAFETY OF DIFFERENT ANTIPLATELET STRATEGIES AFTER CABG: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Yee-Jen Wu, Hung Ju Lin, Chia-Wei Wu, Chien-Hao Chen, Yen-Hung Lin, Chi-Sheng Hung, National Taiwan University Hospital, Taipei, Taiwan

Background: The optimal antiplatelet strategies after coronary artery bypass grafting (CABG) remains uncertain, particularly given the need to balance ischemic and bleeding risk. We conducted a systematic review and network meta-analysis to compare the effectiveness and safety of different antiplatelet strategies after CABG.

Methods: Frequentist network meta-analyses of randomized controlled trials were conducted to compare four antiplatelet strategies: (1) potent P2Y12 inhibitor-based dual antiplatelet therapy (DAPT), (2) clopidogrel-based DAPT, (3) ticagrelor monotherapy, and (4) aspirin monotherapy. The primary efficacy outcome was major adverse cardiac events (MACEs), and the primary safety outcome was major bleeding. Secondary outcomes included mortality, myocardial infarction, stroke, revascularization, graft occlusion, and minor bleeding. Subgroup analyses were performed based on off-pump CABG (OPCAB) proportion.

Abstract Body:

Results: Eighteen trials involving 7039 patients were included. No significant differences in MACEs were observed across treatment strategies. Potent P2Y12 inhibitor-based DAPT increased major bleeding versus aspirin (RR 1.94, 95% CI 1.30-2.89) but reduced graft failure, including patient-level graft occlusion (RR 0.51, 95% CI 0.27-0.94), graft-level occlusion (RR 0.44, 95% CI 0.23-0.86), and venous graft occlusion (RR 0.61, 95% CI 0.46-0.82). No differences were observed across strategies for mortality, myocardial infarction, stroke, or revascularization. In studies with higher OPCAB use (>30%), potent P2Y12 inhibitor-based DAPT demonstrated lower risks of MACEs and graft occlusion. Clopidogrel-based DAPT also reduced graft occlusion versus aspirin in this subgroup.

Conclusion: Across four antiplatelet strategies, no significant differences in MACEs were found after CABG. Potent P2Y12 inhibitor-based DAPT improved

graft patency but increased major bleeding risk. Treatment decisions should therefore be individualized to balance ischemic and bleeding risks, and further research is warranted to refine optimal post-CABG antiplatelet strategies.

Session Title: **Coronary Interventions and Ischemic Heart Diseases Oral Abstracts**

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: THE USE OF COLCHICINE AFTER CORONARY ARTERY STENTING FOR REDUCING RESTENOSIS: ONE-YEAR FOLLOW-UP RESULTS

Author Block: Sherzod Mamatkarim o'g'li Ahmedov, Ezgu Niyat, Tashkent, KY, Uzbekistan, Carmen+, Buxara, Uzbekistan

Background: Restenosis after percutaneous coronary intervention (PCI) remains a major clinical challenge, especially in patients with diabetes or vascular calcification. Inflammation contributes to neointimal hyperplasia and vessel re-narrowing. Colchicine, an anti-inflammatory agent, may reduce restenosis by modulating inflammatory pathways.

Methods: In this prospective, randomized trial, 120 patients undergoing elective PCI with drug-eluting stent implantation were assigned to colchicine 0.5 mg daily (n=60) or placebo (n=60) for 12 months. Inclusion criteria were patients aged 18-75 with stable coronary artery disease. Restenosis was assessed at 12 months by coronary angiography, defined as greater than 50 percent diameter stenosis at the stent site. Secondary endpoints included major adverse cardiovascular events (MACE) and inflammatory markers (C-reactive protein, IL-6, TNF-alpha). Subgroup analyses evaluated outcomes in diabetic patients and those with vascular calcification.

Results: Restenosis occurred in 1 patient (1.7 percent) in the colchicine group versus 6 patients (10 percent) in the placebo group (p = 0.02). By vessel, restenosis in the colchicine group was LAD 0 percent, RCA 0 percent, and LCX 10 percent, compared to LAD 7 percent, RCA 25 percent, and LCX 40 percent in the placebo group. Diabetic patients experienced restenosis in 0 of 20 patients with colchicine versus 4 of 20 with placebo. Among patients with vascular calcification, restenosis occurred in 1 of 15 patients with colchicine versus 3 of 15 with placebo. The reduction in restenosis is attributed to colchicine's anti-inflammatory effects. No significant adverse events were reported.

Conclusion: Colchicine 0.5 mg daily significantly reduced restenosis after PCI, including in high-risk patients with diabetes and vascular calcification. These findings support colchicine as an adjunctive therapy to improve long-

Abstract Body:

term PCI outcomes by targeting vascular inflammation, consistent with ESC and ACC guideline recommendations for anti-inflammatory strategies in high-risk cardiovascular patients.

Session Title: Cardiac Arrhythmias Oral Abstracts

Topic 1: Cardiac Arrhythmias

Publishing Title: CATHETER ABLATION VERSUS ANTIARRHYTHMIC DRUGS AMONG POST MYOCARDIAL INFARCTION PATIENTS WITH ICD AND MONOMORPHIC VENTRICULAR TACHYCARDIA: A META ANALYSIS

Author Block: Yula Cueto, Joseph Marc Seguban, Josefino Catangui, Don Hale Hilario, Manila Doctors Hospital, Manila, Philippines

Background: Post-myocardial infarction (MI) patients with implantable cardioverter-defibrillators (ICDs) frequently experience recurrent monomorphic ventricular tachycardia (VT), leading to repeated ICD shocks, VT storm, and increased hospitalizations. Antiarrhythmic drugs (AADs) provide limited suppression of VT and carry risks of long-term toxicity. Catheter ablation has emerged as an alternative approach, but its impact on major clinical outcomes requires further clarification.

Methods: This meta-analysis included randomized controlled trials—VANISH, SURVIVE-VT, and VANISH-2—involving adult post-MI patients with ICDs and sustained monomorphic VT. Participants were randomized to catheter ablation or AAD initiation/escalation. Pooled risk ratios were calculated for cardiovascular death, appropriate ICD shocks, VT storm, and cardiac hospitalization.

Abstract

Body: **Results:** Catheter ablation showed consistent reductions in cardiovascular death (RR 0.92), appropriate ICD shocks (RR 0.83), VT storm (RR 0.81), and cardiac hospitalization (RR 0.66), corresponding to relative risk reductions of 8%, 17%, 19%, and 34%, respectively. Although confidence intervals crossed unity for all outcomes, the direction of effect consistently favored ablation. Certainty of evidence was high for cardiovascular death, ICD shocks, and VT storm, and moderate for hospitalization due to heterogeneity and imprecision. **Conclusion:** Catheter ablation provides a consistent trend toward reducing arrhythmic events and ICD interventions in post-MI patients with monomorphic VT. While survival benefits remain unconfirmed, the overall direction of benefit supports earlier consideration of ablation to reduce arrhythmic burden and healthcare utilization. Larger, standardized trials are needed to determine long-term mortality and quality-of-life impact.

Session Title: Cardiac Arrhythmias Oral Abstracts

Topic 1: Cardiac Arrhythmias

Publishing Title: EFFICACY AND SAFETY OF ETHANOL INFUSION INTO THE VEIN OF MARSHALL COMBINED WITH RADIOFREQUENCY CATHETER ABLATION IN PATIENTS WITH PERSISTENT ATRIAL FIBRILLATION AND HEART FAILURE

Author Block: Lingcong Kong, Xinhua Wang, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, People's Republic of China

Background: Atrial fibrillation (AF) and heart failure (HF) exhibit a bidirectional, mutually exacerbating relationship, posing significant clinical challenges. Recent studies suggest that ethanol infusion into the vein of Marshall (EIVOM) combined with radiofrequency catheter ablation (RFCA) may enhance procedural efficacy by facilitating mitral isthmus block. However, evidence for this approach in AF patients with concomitant HF remains limited. This study aimed to evaluate the safety and efficacy of combined EIVOM-RFCA versus RFCA alone in patients with persistent AF and HF.

Abstract Body: **Methods:** A retrospective analysis was conducted across four centers on patients with persistent AF, reduced left ventricular ejection fraction (LVEF $\leq 50\%$), and undergoing initial catheter ablation. Baseline clinical parameters, intraprocedural technical data, and perioperative outcomes were analyzed. Primary endpoints included freedom from HF exacerbation and arrhythmia-free survival at 1 year post-procedure. Secondary endpoints comprised mortality, ischemic stroke, and bleeding events.

Results: Among 91 eligible patients (44 in the combined EIVOM-RFCA group; 47 in the RFCA-alone group), the cohort had a median age of 63.5 ± 9.2 years, 75.8% male (69/91), median CHA₂DS₂-VASc score of 3 (IQR 2-4), and median LVEF of 40% (IQR 35-45). Baseline characteristics were comparable between groups. At 1 year, the combined group demonstrated significantly higher HF-exacerbation-free rates (95.5% [42/44] vs. 76.6% [36/47], $P=0.011$, Hazard Ratio, 0.185; 95%CI, 0.062-0.548) and higher arrhythmia-free survival (84.1% [37/44] vs. 59.6% [28/47], $P=0.013$, Hazard Ratio, 0.371; 95%CI, 0.172-0.801). One non-procedure-related death occurred in the RFCA group at 10 months. Bleeding events were comparable (4.5% [2/44] vs. 2.1% [1/47], $p=0.52$), with no perioperative ischemic strokes. Pericardial effusion rates were 6.8% (3/44)

and 4.3% (2/47) in the combined and RFCA-alone groups, respectively ($p=0.59$), showing no significant difference.

Conclusion: Our study provides robust evidence that a combined EIVOM and RFCA strategy significantly improves both rhythm control and HF outcomes in patients with PeAF and HFrEF.

Session Title: Cardiac Arrhythmias Oral Abstracts

Topic 1: Cardiac Arrhythmias

Publishing Title: PULSED-FIELD ABLATION AS A FIRST-LINE STRATEGY FOR RHYTHM CONTROL IN ATRIAL FIBRILLATION: A NETWORK META-ANALYSIS OF RANDOMIZED-CONTROLLED TRIALS

Author Block: Patavee Pajareya, Watsapon Chuanchai, Janista Kaewsrihawong, Noppachai Siranart, Somkiat Phutinart, Ronpichai Chokesuwattanaskul, Division of Cardiovascular Medicine, King Chulalongkorn Memorial Hospital, Chulalongkorn University, Bangkok, Thailand

Abstract Body: **Background:** Pulsed-field ablation (PFA) is a cutting-edge technology for atrial fibrillation (AF), yet no prior meta-analysis has investigated its use as a first-line strategy compared with radiofrequency ablation (RFA) or cryoballoon ablation (CBA).

Methods: A search was conducted from the inception of PubMed, Scopus, and the Cochrane Library to November 2025. The intervention group included AF patients who underwent PFA, RFA, or CBA, whereas those who received anti-arrhythmic drugs (AADs) alone served as the comparator. The majority of the intervention population (>75%) must receive catheter ablation before initiating AADs. **Primary endpoints** were AF recurrence, stroke incidence, and all-cause mortality. **Secondary endpoints** were diagnostic-to-ablation time, procedural time, and procedure-related complications.

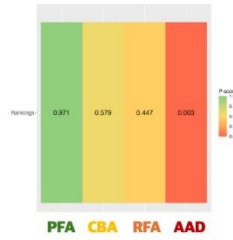
Results: A total of 8 RCTs were included (1,595 patients; mean age 58.4±10.9 years). Compared with AADs, patients who underwent first-line PFA achieved significantly lower AF recurrence (HR0.32, 95%CI 0.19-0.53, p<0.001) and the highest P-score (0.971), followed by CBA (HR0.48, 95%CI 0.36-0.64, p<0.001) and RFA (HR0.56, 95%CI 0.35-0.90, p=0.016), with similar rates of stroke incidence and all-cause mortality. PFA also ranked highest in P-scores for diagnostic-to-ablation time (0.547), procedural time (1.000), and procedure-related complications (0.737).

Conclusion: PFA represents a promising first-line ablation option for AF,

supporting its use before AAD initiation.

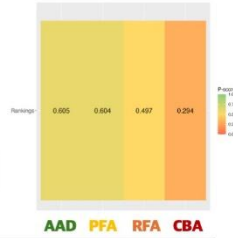
A) Arrhythmia-Free Survival: HR (95%CI)

PFA				
0.67 [0.44; 1.02]	CBA			
0.57 [0.29; 1.14]	0.86 [0.50; 1.48]	RFA		
0.32 [0.19; 0.53]	0.48 [0.36; 0.64]	0.56 [0.35; 0.90]	AAD	



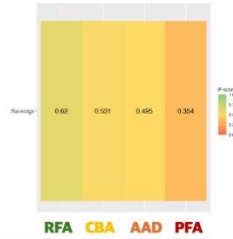
B) Stroke Incidence: OR (95%CI)

PFA				
0.50 [0.04; 5.54]	CBA			
0.75 [0.03; 18.38]	1.51 [0.18; 12.37]	RFA		
0.91 [0.05; 17.87]	1.22 [0.20; 7.44]	1.84 [0.32; 10.47]	AAD	



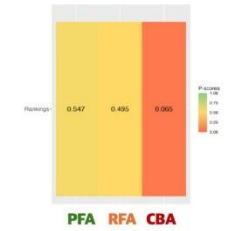
C) All-cause Mortality: OR (95%CI)

PFA				
2.02 [0.07; 60.98]	CBA			
2.61 [0.03; 263.86]	1.29 [0.06; 29.16]	RFA		
2.02 [0.02; 163.86]	1.00 [0.06; 16.10]	0.78 [0.19; 3.19]	AAD	



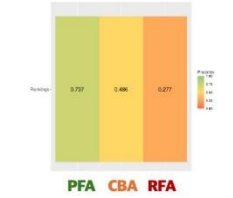
D) Diagnosis-to-Ablation Time, in Years: MD (95%CI)

PFA			
-0.60 [-1.78; 0.58]	CBA		
-0.04 [-1.37; 1.28]	0.56 [-0.05; 1.16]	RFA	



E) Procedure-Related Complications: OR (95%CI)

PFA			
0.50 [0.04; 5.54]	CBA		
0.40 [0.03; 5.18]	0.81 [0.35; 1.87]	RFA	



Session Title: Cardiac Arrhythmias Oral Abstracts

Topic 1: Cardiac Arrhythmias

Publishing Title: VAGAL MANEUVERS VERSUS PHARMACOLOGIC THERAPY FOR ACUTE TERMINATION OF SUPRAVENTRICULAR TACHYCARDIA: A SYSTEMATIC REVIEW AND NETWORK META ANALYSIS

Author Block: Derren Rampengan, Clonia Milla, David Nugraha, Michael Owen Hogipranata, Yongki Welliam, Melissa Ariyanto, Faculty of Medicine, Universitas Sam Ratulangi, Manado, Indonesia, R.D. Kandou Central General Hospital, Manado, Indonesia

Background: Supraventricular tachycardia affects about 23 per 1,0000 people worldwide, with an incidence near 35 per 100,000 person-years. Guidelines favor vagal maneuvers first, yet adenosine and verapamil are commonly used and comparative guidance across options is limited. Because prior meta-analyses focus mainly on nonpharmacologic strategies, this network meta-analysis provides new head-to-head evidence on efficacy and safety for acute SVT termination across vagal and drug treatments.

Abstract Body: **Methods:** This network meta-analysis followed PRISMA guidelines and searched seven databases; PubMed, Scopus, Cochrane Library, ProQuest, EBSCO, ScienceDirect, and Epistemonikos, from inception to December 2025. Effects were pooled as risk ratios with 95% confidence intervals using a random effects model, treatments were ranked using SUCRA, and consistency was assessed with node splitting, with all analyses conducted in R version 4.4.1 using the netmeta package.

Results: Thirty-one studies totalling 4,010 patients were included. For acute SVT termination, modified Valsalva increased conversion versus standard Valsalva (RR 2.08, 95% CI 1.65-2.62), with higher success for verapamil (RR 4.08, 2.44-6.84) and adenosine (RR 4.45, 2.65-7.45); adenosine versus verapamil RR 1.09 (0.91-1.30). Heterogeneity for conversion was substantial (τ^2 0.0658; I^2 83.8%). For SVT recurrence, adenosine showed higher recurrence than verapamil (RR 1.46, 1.16-1.84; τ^2 0.0104; I^2 13.2%). For adverse events, modified Valsalva versus SVM RR 1.50 (0.98-2.28) with low average heterogeneity (τ^2 0.0000; I^2 0.0% [0.0-74.6%]). For need for rescue IV antiarrhythmic drugs, amiodarone versus pooled SVM/verapamil control RR

0.07 (0.01-0.68; τ^2 0.4818; I^2 87.6%). Egger tests showed no small-study effects (p=0.1258-0.1380).

Conclusion: Pharmacologic therapy achieved the highest conversion success, while modified Valsalva was the most effective non-pharmacologic maneuver. Verapamil showed the lowest recurrence risk. Adverse-event and rescue-therapy findings show overall evidence supports a stepped strategy beginning with modified Valsalva followed by pharmacologic agents when needed.

Session Title: Cardiovascular Disease Prevention Oral Abstracts

Topic 1: Cardiovascular Disease Prevention

Publishing Title: SEX DIFFERENCES IN PREVALENCE, TREATMENT AND CONTROL OF CARDIOVASCULAR RISK FACTORS IN KOREA

Author Block: Seonji Kim, Seung Il Kim, Seng Chan You, Department of Biomedical Systems Informatics, Yonsei University College of Medicine, Seoul, South Korea, Institute for Innovation in Digital Healthcare, Yonsei University, Seoul, South Korea

Abstract Background: Cardiovascular disease (CVD), the leading global cause of death, disproportionately affects women, who show a steep age-related increase in risk factor burden and often delayed care than men. We examined sex differences in the prevalence, awareness, treatment, and control of major CVD risk factors in Korea.

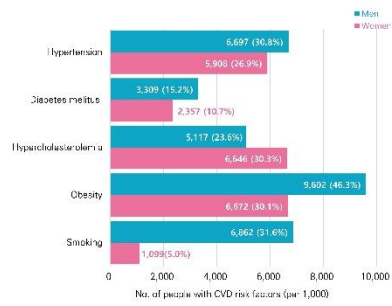
Abstract Methods: We analyzed data from adults aged ≥ 20 years using Korea National Health and Nutrition Examination Survey between 2014 and 2023. Risk factors included hypertension, diabetes, hypercholesterolemia, obesity, and smoking. We described sex-specific distributions and estimated rates of awareness, treatment, and control among treated patients with hypertension, diabetes, and hypercholesterolemia.

Abstract Body: Results: Among individuals with CVD, men were more numerous and had a higher mean number of risk factors (1.37 vs 0.99), whereas hypercholesterolemia was more frequent in women (Figure 1A). The awareness and treatment rates were higher in women, but control rates those under treatment for hypertension and hypercholesterolemia were higher in men (Figure 1B). Over 10 years, sex differences were observed in most management indicators.

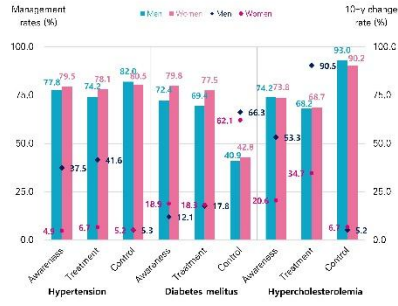
Abstract Conclusion: In Korea, women with CVD show higher awareness and treatment of major risk factors but lower control rates and 10-year change rates, particularly for hypertension and hypercholesterolemia. Sex-specific strategies are needed to close the gap between treatment and effective risk factor

control.

(A) Distribution of number of cardiovascular risk factors by sex



(B) Management and 10-year change rates of cardiovascular risk factors by sex



Session Title: Cardiovascular Disease Prevention Oral Abstracts

Topic 1: Cardiovascular Disease Prevention

Publishing Title: DEEP LEARNING FOR ECG-BASED ESTIMATION OF AGE, SEX, AND CARDIOVASCULAR RISK IN HEALTHY THAI POPULATION

Author Block: Patavee Pajareya, Janista Kaewsrihawong, Noppachai Siranart, Somkiat Phutinart, Patcharaphon Chaitanakulmongkon, Nonthikorn Theerasuwipakorn, Ronpichai Chokesuwattanaskul, Chatchawit Aporntewan, None Wanitchollakit, Peraga Puangtong, Akarapon Watcharapalakorn, Division of Cardiovascular Medicine, King Chulalongkorn Memorial Hospital, Chulalongkorn University, Bangkok, Thailand, Bioinformatics and Computational Biology Program, Chulalongkorn University, Bangkok, Thailand

Abstract Body: **Background:** Electrocardiograph (ECG) signals contain physiologic patterns that extend beyond rhythm interpretation and may encode clinical information. We develop a machine-learning model predicting age, sex, and cardiovascular (CV) risk score from 12-lead ECG.

Methods: This is a retrospective study from tertiary care center, enrolling healthy individuals with controlled blood pressure, glucose, and lipid levels and no history of CV disease. Twelve-lead ECGs were collected along with age, sex, and Thai CV risk, and were preprocessed using border detection, lead separation, and band-pass filtering. Individuals were randomly assigned to training, validation, and test sets. Three models—CNN, BiLSTM, and Attention-based architectures—were developed for age, sex, and CV risk prediction.

Results: Results: A total of 500 healthy Thai individuals (mean age 50.4±11.1 years; 50% female) were included. The CNN achieved the best performance for age prediction (root mean square error [RMSE] 10.03). For sex prediction, both the CNN and Attention model performed well, with accuracies of 77% (AUROC 0.856) and 79% (AUROC 0.842), respectively. For Thai CV risk prediction, the Attention model performed best (RMSE 1.95). This likely reflects that heart age is driven by local ECG features captured well by CNN, whereas CV risk depends on global signal patterns better detected by attention models.

Conclusion: AI-ECG-based demographic and risk prediction could be a

promising tool for clinical risk stratification.

PREPROCESSING



12-lead ECG Images

→ Lead Separation

→ Band-pass Filtering

→ Preprocessed ECG Signals 

TRAINING



MODELS

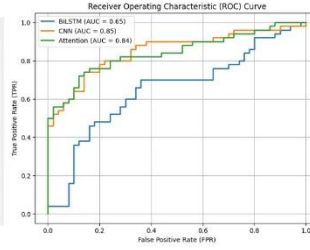
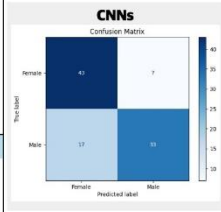
CNNs

BiLSTMs



Attention

EVALUATION



Session Title: Cardiovascular Disease Prevention Oral Abstracts

Topic 1: Cardiovascular Disease Prevention

Publishing Title: EXCESS APOLIPOPROTEIN B AND RISK OF DEGENERATIVE VALVULAR HEART DISEASES

Author Block: Jianrui Ma, Xiangbin Pan, Fuwai Hospital, Beijing, People's Republic of China

Background: Apolipoprotein B (apoB) and low-density lipoprotein cholesterol (LDL-C) are both pathogenic in degenerative valvular heart diseases (VHDs) but highly correlated. Adopting excess apoB, this study aimed to evaluate the incremental risks of apoB beyond LDL-C level in the occurrence and progression of common degenerative VHDs.

Methods: A total of 414,203 participants from the UK Biobank were eligible for the main analysis. Excess apoB was defined as the actual apoB level minus the expected apoB that was determined by linear regressions of LDL-C level and apoB level in participants with triglycerides ≤ 1 mmol/L. The primary outcomes included incident aortic stenosis (AS), aortic regurgitation (AR), and mitral regurgitation (MR). The secondary outcomes included AS-, AR-, and MR-related intervention or mortality.

Abstract Body: **Results:** During a median follow-up period of 13.3 years, 4,584 incident AS, 1,639 incident AR, and 4,793 incident MR occurred. Positive associations of excess apoB with incident AS, AS-, and AR-related intervention in a dose-dependent manner were observed. The adjusted incident AS rates (95% CI) across excess apoB quartiles (Q1-Q4) were 5.94 (5.50-6.40), 7.38 (6.86-7.89), 8.73 (8.27-9.23), and 11.02 (10.47-11.53) per 10,000 person-years. In the multivariate analysis, the adjusted HR (95% CII) of incident AS was 1.23 (1.11-1.37) for Q2, 1.46 (1.32-1.61) for Q3, and 1.84 (1.68-2.03) for Q4. The absolute 10-year risk of AS ranged from 0.08% to 2.54% among various age-stratified and sex-specific groups. The adjusted HRs (95% CI) of AS- and AR-related intervention or mortality were 1.18 (1.03-1.36) and 1.20 (1.03-1.38) in Q2, 1.34 (1.18-1.54) and 1.30 (1.13-1.50) in Q3, and 1.50 (1.31-1.71) and 1.45 (1.26-1.66) in Q4, respectively. These associations showed significant interaction with sex, with worse outcomes in women.

Conclusion: Elevated excess apoB levels were significantly associated with

increased risks of incident AS, AS-, and AR-related adverse events, with higher risks in women. This study confirmed the incremental effects of apoB over LDL-C in VHD development, potentially benefiting the primary and secondary prevention in future clinical practice.

Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: AI-POWERED ECG INTERPRETATION SYSTEM FOR ARRHYTHMIA PREDICTION AND HYPERKALEMIA DETECTION USING MACHINE LEARNING

Author Block: Arvind Kumar, Tania Bansal, Salil Jaura, Pragma Medical Institute, Bathinda, India

Abstract Body:

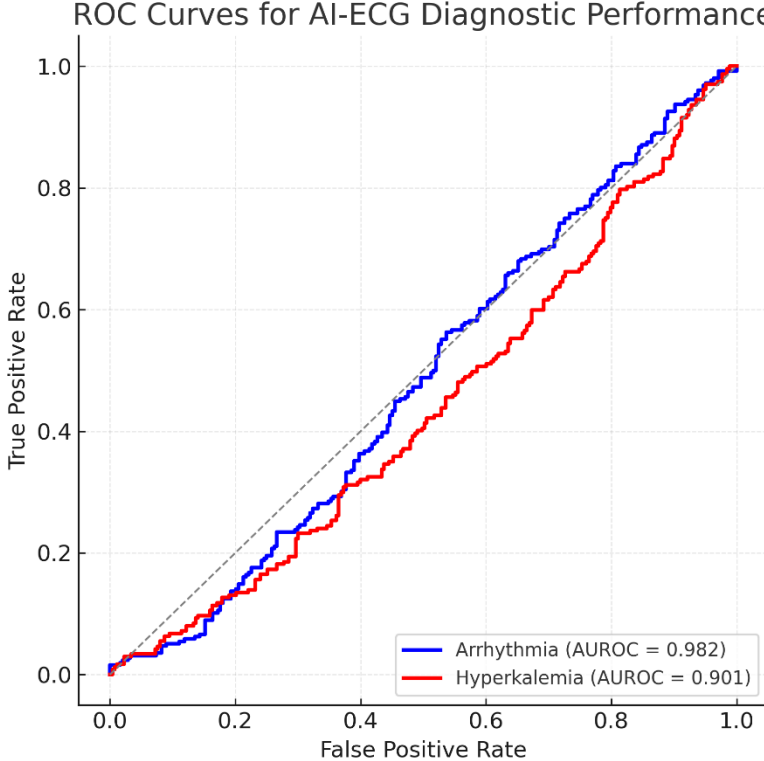
Background: Artificial intelligence (AI) has emerged as a powerful tool for electrocardiogram (ECG) analysis. This study evaluated the diagnostic performance of an AI-powered ECG interpretation system for arrhythmia prediction and hyperkalemia detection.

Methods: 4200 patients were enrolled over 12 months. Standard 12-lead ECGs were analyzed in parallel by a validated deep learning AI model and board-certified cardiologists blinded to AI results and clinical data. Primary outcomes included sensitivity, specificity, positive predictive value, and negative predictive value for arrhythmia and hyperkalemia detection. Secondary outcomes assessed the impact of AI-driven alerts on workflow efficiency and time to therapy.

Results: AI-ECG system demonstrated 97.2% sensitivity and 96.1% specificity for arrhythmia detection, outperforming manual interpretation for atrial fibrillation, atrial flutter, and ventricular ectopy ($p < 0.001$). For hyperkalemia, sensitivity and specificity were 83.5% and 87.3%, respectively, reliably flagging all critical potassium elevations within one minute. AI alerts reduced median time-to-therapy by 19 minutes.

Conclusion: AI-powered ECG analysis enables highly accurate, rapid detection of arrhythmias and hyperkalemia, supporting earlier clinical intervention and improving workflow efficiency. These findings advocate for broader multicenter

validation and integration of AI-ECG tools in routine cardiology practice.



Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: REAL-WORLD PROCEDURAL COMPARISON OF THREE PULSED FIELD ABLATION SYSTEMS FOR ATRIAL FIBRILLATION: A SINGLE-CENTRE ANALYSIS

Author Block: Duron Prinsloo, Hui-Chen Han, Adam J. Brown, Nitesh Nerlekar, Emily Kotschet, Francis Ha, 1. Victorian Heart Institute and Victorian Heart Hospital, Clayton, Australia

Background: Pulsed field ablation (PFA) is an emerging non-thermal catheter ablation modality for treatment of atrial fibrillation (AF). Real-world comparative data on procedural workflows and acute outcomes of available systems are limited.

Methods: Consecutive patients undergoing PFA for AF at a single tertiary centre were studied retrospectively. Ablation was performed with one of three systems: Varipulse (Johnson & Johnson MedTech, US), Farawave without electroanatomic mapping, or Faraview with integrated electroanatomic mapping (both Boston Scientific, US). All patients underwent pulmonary vein isolation, with adjunctive lesion sets at the operator's discretion.

Abstract Body: **Results:** Overall, 150 patients underwent PFA, evenly distributed across systems (n=50 each). Baseline characteristics were similar, with 28-38% female (p=0.60), median age 63-65 years (p=0.34), and persistent AF in 40-62% of patients (p=0.09). Posterior wall (PW) ablation was performed more often with Faraview (50%) than with Varipulse (26%) or Farawave (24%) (p=0.01). Faraview procedures were associated with more total and pulmonary vein PFA applications than Farawave (total median 60 vs 39; PV 52 vs 36; both p<0.001), but fewer PW applications (18 vs 24; p=0.028). Varipulse cases had longer procedure and left atrial catheter dwell times than Farawave or Faraview (both p<0.001) but shorter fluoroscopy time (p<0.001); 8 patients (16%) also underwent radiofrequency cavotricuspid isthmus ablation. Varipulse fluoroscopy time was lower in cases 26-50 than 1-25 (p=0.01). Major and minor complication rates were low and similar across systems (major p=1.00; minor p=0.36).

Conclusion: In this real-world single-centre comparison, PFA systems showed

distinct procedural profiles shaped by catheter design and the use of electroanatomic mapping and tissue contact information.

Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: IMPACT OF VEIN OF MARSHALL ETHANOL INFUSION-INDUCED LOW-VOLTAGE AREA ON ATRIAL ARRHYTHMIA RECURRENCE IN PERSISTENT ATRIAL FIBRILLATION

Author Block: Hualong Li, Jianlong Yin, Teng Li, Fuwai Shenzhen Hospital, Chinese Academy of Medical Sciences, Shenzhen, People's Republic of China

Background: No study has evaluated the impact of Vein of Marshall Ethanol Infusion (VOMEI)-induced low-voltage area (LVA) on the recurrence of atrial arrhythmias in patients with persistent atrial fibrillation (PeAF).

Methods: A retrospective cohort study was conducted involving 53 patients. The primary endpoint was freedom from atrial arrhythmia recurrence within 12 months post-procedure. Survival probabilities were estimated using the Kaplan-Meier method. The magnitude of effect was estimated with Cox proportional hazards regression models.

Abstract Body: **Results:** The overall freedom from atrial arrhythmia recurrence at 12 months was 73.6%. Participants were categorized into two groups based on the proportion of LVA after VOMEI: Group A (LVA < 3%) and Group B (LVA ≥ 3%). No baseline significant differences were observed between two groups. The multivariate Cox regression analysis revealed that recurrence was significantly associated with LVA and Age. Group B demonstrated significantly higher event-free survival (86.7%; 95% CI: 75.3-99.7%) compared to Group A (56.5%; 95% CI: 39.5-80.9%), with a log-rank p-value of 0.013. Cox regression analysis indicated that Group B had a significantly reduced risk of arrhythmia recurrence (HR = 0.26; 95% CI: 0.08-0.82; p = 0.022) relative to Group A.

Conclusion: A larger VOMEI-induced low-voltage area (≥ 3%) is associated with a significantly lower risk of atrial arrhythmia recurrence within 12 months after

procedure in patients with PeAF.

Figure 1 Measurement of LVA resulted from VOMEI

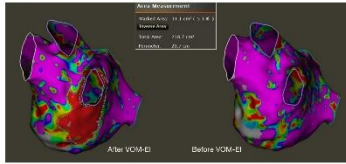
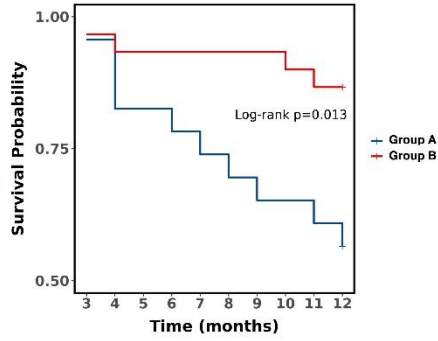


Table 1 Univariate and multivariate Cox regression analysis for atrial arrhythmia recurrence

Characteristic	Univariable			Multivariable		
	HR	95% CI	p-value	HR	95% CI	p-value
LVA						
Group B	—	—	—	—	—	—
Group A	3.89	1.22, 12.42	0.022	4.27	1.30, 13.98	0.017
Age						
L [57.59.3], years	—	—	—	—	—	—
M [59.3, 67.7], years	1.57	0.26, 9.41	0.620	2.52	0.48, 17.79	0.245
H [67.7, 77.7], years	5.75	1.24, 26.65	0.025	10.61	2.21, 50.93	0.003
Heart Failure						
No	—	—	—	—	—	—
Yes	0.25	0.03, 1.90	0.181	0.18	0.02, 1.42	0.104

Figure 2 Kaplan-Meier curves for atrial arrhythmia-free survival



Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: COMPARATIVE EFFICACY AND SAFETY OF PULSED FIELD ABLATION, RADIOFREQUENCY ABLATION, AND CRYOBALLOON ABLATION FOR ATRIAL FIBRILLATION IN THE ELDERLY ≥ 75 YEARS OLD: A NETWORK META-ANALYSIS

Author Block: Patavee Pajareya, Watsapon Chuanchai, Noppachai Siranart, Nithi Tokavanich, Ronpichai Chokesuwattanaskul, Narut Prasitlumkum, King Chulalongkorn Memorial Hospital, Chulalongkorn University, Bangkok, Thailand, Pali Momi, Hawaii Pacific Health, Aiea, HI, USA

Background: Comparative efficacy and safety of pulsed field ablation (PFA), radiofrequency ablation (RFA), and cryoballoon ablation (CBA) in elderly atrial fibrillation (AF) remains limited.

Methods: A search was conducted from the inception of PubMed, Scopus, and Cochrane Library to September 2025. Elderly (≥ 75 years) AF patients who underwent PFA, RFA, or CBA were included. **Efficacy outcomes** include arrhythmia-free survival, procedural success, and procedural time. **Safety outcomes** were overall procedure-related complications, major complications (stroke/TIA, cardiac tamponade, phrenic nerve palsy, valve damage, myocardial infarction), and minor complications.

Abstract Body:

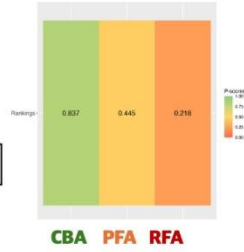
Results: Six studies with 1,926 patients (243 PFA, 1,101 RFA, and 582 CBA) were included. PFA showed comparable arrhythmia-free survival to both RFA (OR 1.08, 95%CI 0.68-1.71) and CBA (OR 0.86, 95%CI 0.54-1.38). PFA had the highest P-score for procedural time (0.884), with a significant difference vs. RFA (MD -34.35 minutes, 95%CI -48.92 to -19.78). Although not statistically significant, PFA showed the highest P-scores for overall complications (0.696), major complications (0.804), and minor complications (0.959).

Conclusion: In the elderly AF, PFA offered non-inferior arrhythmia-free survival and shorter procedural time, with a trend toward more favorable safety profile,

compared with both RFA and CBA.

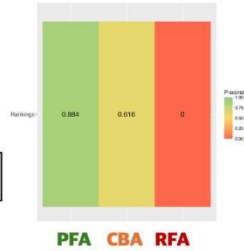
A) Arrhythmia-Free Survival: OR (95%CI)

PFA		CBA		RFA
0.86 (0.54-1.38)			1.25 (0.94-1.67)	
1.08 (0.68-1.71)				



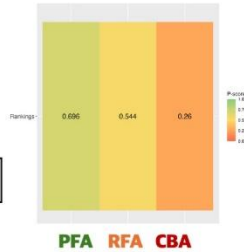
B) Procedural Time (minutes) : MD (95% CI)

PFA		CBA		RFA
-5.79 (-21.23;9.66)			-28.57 (-18.44; -38.69)	
-34.35 (-48.92; -19.78)				



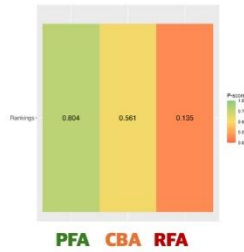
C) Overall Complications: OR (95%CI)

PFA		CBA		RFA
0.54 (0.10-3.11)			1.35 (0.51-3.60)	
0.73 (0.13-4.09)				



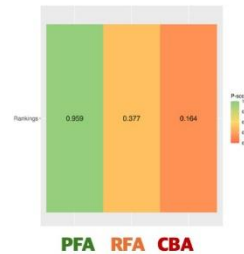
D) Major Complications: OR (95%CI)

PFA		CBA		RFA
0.53 (0.08-3.62)			0.66 (0.31-1.39)	
0.35 (0.06-2.20)				



E) Minor Complications: OR (95%CI)

PFA		CBA		RFA
0.32 (0.10-1.08)			1.16 (0.67-1.70)	
0.37 (0.12-1.20)				



Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: PREVALENCE AND DISCRIMINATION OF ONGOING FIBRILLATION IN ISOLATED PULMONARY VEIN IN NON-PAROXYSMAL ATRIAL FIBRILLATION ABLATION

Author Block: Lingcong Kong, Xinhua Wang, Ren Ji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, People's Republic of China

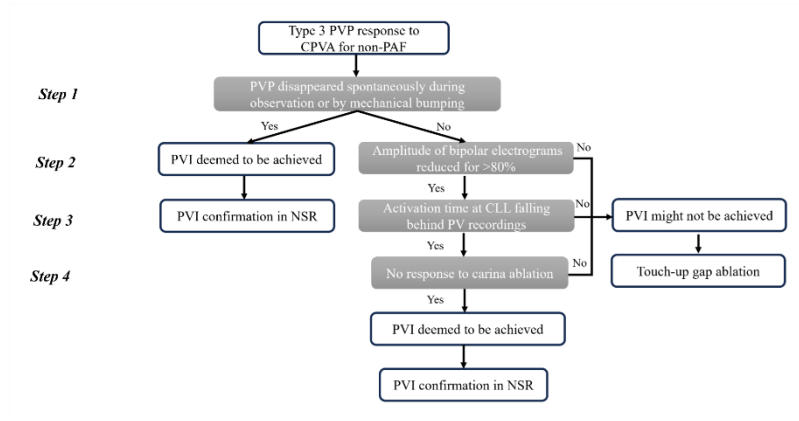
Background: Pulmonary vein isolation (PVI) usually results in abolishment of PV potentials (PVP) rather than concomitant termination of non-paroxysmal atrial fibrillation (non-PAF). It is unclear whether ongoing fibrillation in isolated PVs (OFIP) might co-exist with AF in non-PAF ablation. This study sought to develop an algorithm to distinguish between OFIP and isolation failure.

Methods: Non-PAF patients undergoing first-time ablation were divided into retrospective induction cohort (IC) and prospective validation cohort (VC). In case of ongoing PV fibrillation after PV ablation, PVI completion was assessed based on unique PVP phenomena and after systemic gaps mapping and ablation.

Abstract Body: **Results:** Twenty (3.55%) of 563 had OFIP, including 9/300 from the IC and 11/263 from the VC. Based on OFIP cases in the IC, either spontaneous or bumping-induced PVP disappearance, or a combination of bipolar voltage reduction > 80%, local activation time later than PV recordings and no response to carina ablation were adopted as the major criteria for developing a discriminating algorithm. In 20 patients with OFIP in the VC, the algorithm identified true OFIP in 11, false OFIP in 3 and true incomplete PVI in 6. The sensitivity, specificity, positive and negative predictive value was 100%, 66.7%, 78.6% and 100%, respectively.

Conclusion: OFIP was not negligible in non-PAF ablation procedures for achieving efficient and safe PVI. A novel four-step algorithm was developed to

discriminate OFIP with good predictive value.



Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: COMPARATIVE EFFECTIVENESS OF DABIGATRAN, RIVAROXABAN, AND EDOXABAN ON ALL-CAUSE MORTALITY AND RENAL OUTCOMES IN ASIAN PATIENTS WITH ATRIAL FIBRILLATION: A PROPENSITY SCORE-WEIGHTED ANALYSIS

Author Block: Jo-Hsin Chen, YU-TING WANG, Shu-Fen Liao, Gregory Y. H. Lip, Jong-Shiuan Yeh, Department of Pharmacy, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan

Background: Atrial fibrillation (AF) increases the risk of stroke and systemic embolism. Direct oral anticoagulants (DOACs) such as dabigatran, rivaroxaban, and edoxaban are preferred over warfarin due to their improved pharmacokinetic profiles, but there are limited data on comparative effectiveness on mortality and renal outcomes, particularly in Asian populations.

Methods: This observational, multi-center, retrospective cohort study utilized data from three hospitals in Taiwan, involving 4,392 adult patients diagnosed with AF between July 2013 and December 2020. Patients treated with dabigatran, rivaroxaban, or edoxaban were followed for two years to assess all-cause mortality, cardiovascular mortality, renal failure, acute kidney injury (AKI), and >30% decline in estimated glomerular filtration rate (eGFR).

Abstract Body: Propensity score weighting was employed to mitigate confounding biases.

Results: Comparing with dabigatran, rivaroxaban and edoxaban were associated with higher risks of all-cause mortality (vs. rivaroxaban, Hazard Ratio (HR): 1.76, 95% CI 1.320-2.342, $p < 0.0001$; and vs. edoxaban, HR: 1.55, 95% CI 1.081-2.218, $p = 0.0171$). Rivaroxaban and edoxaban provided less protective effect against renal failure than dabigatran (vs. rivaroxaban, HR: 1.66 (95% CI 1.079-2.538, $p = 0.0210$); vs. edoxaban, HR: 1.80 (95% CI 1.075-3.012, $p = 0.0254$), with no significant differences in major bleeding rates among the DOACs after propensity score adjustment.

Conclusion: This real-world observational study supports the efficacy of dabigatran in reducing mortality and renal failure risk in Asian patients with AF compared to rivaroxaban and edoxaban.

Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: REFRACTORY JUNCTIONAL ECTOPIC TACHYCARDIA IN A POST-OPERATIVE INFANT

Author Block: Charmaine Chan, Teng Hong Tan, Jonathan T L Choo, KK Women and Children's Hospital, Singapore, Singapore

Background: Junctional ectopic tachycardia (JET) is a narrow-complex tachycardia due to abnormal automaticity at the atrioventricular junction and is a recognised cause of haemodynamic instability after congenital cardiac surgery. We describe a case of refractory postoperative JET in an infant resulting in death.

Case: A 2-month-old ex-premature female (36+6 weeks) underwent repair of a large ventricular septal defect. Three hours postoperatively she developed JET with a heart rate (HR) of 160-180 bpm. Despite cooling and dexmedetomidine, her HR escalated to 250 bpm.

Decision-making: She showed minimal response to intravenous amiodarone, so ivabradine was added. Tachycardia persisted in the 200s with hypotension and progressive ventricular dysfunction. Echocardiography revealed severely depressed function, prompting elective ECMO cannulation 15 hours postoperatively. She subsequently developed a slow junctional rhythm, but myocardial recovery did not occur. Her ECMO course was complicated by brief circuit clotting requiring eCPR. On postoperative day 7, JET recurred; antiarrhythmics were restarted, achieving sinus rhythm after 6 days, yet ventricular function remained severely impaired. ECMO was withdrawn after 3 weeks due to non-recovery, and she demised shortly after decannulation.

Abstract Body: **Conclusion:** Refractory postoperative JET in infants is poorly tolerated and can lead to persistent myocardial depression despite rhythm control. Early aggressive therapy—including combination antiarrhythmics such as ivabradine—and timely ECMO initiation should be considered to prevent cardiovascular collapse.

Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: LEFT ATRIAL SIZE-BASED ANTICOAGULATION DISCONTINUATION AFTER CATHETER ABLATION FOR ATRIAL FIBRILLATION: A POST-HOC ANALYSIS OF THE ALONE-AF TRIAL

Author Block: Daehoon Kim, Jaemin Shim, Eue-Keun Choi, Il-Young Oh, Jun Kim, Young Soo Lee, Jum-Suk Ko, Kyoung-Min Park, Jung Hoon Sung, Hyung Wook Park, Hyung-Seob Park, Kim jong-youn, KI-WOON KANG, Dongmin Kim, Jin-Kyu Park, Dae Hyeok Kim, Jin-Bae Kim, Hee Tae Yu, Tae-Hoon Kim, Jae-Sun Uhm, Hui-Nam Pak, Boyoung Joung, Yonsei University College of Medicine, Seoul, South Korea

Abstract Background: In the ALONE-AF randomized trial, discontinuation of oral anticoagulation (OAC) after ablation for atrial fibrillation (AF) showed net clinical benefit, compared with continued OAC therapy. This post-hoc analysis of the trial assessed optimal OAC strategies by left atrial diameter (LAD), a commonly used index of atrial remodeling.

Abstract Methods: In the ALONE-AF trial, 840 AF patients recurrence-free for ≥ 1 year after ablation with at least 1 non-sex-related stroke risk factor were randomized to discontinue or continue OAC. Patients were further stratified by median LAD (40 mm). The primary outcome was a composite of stroke, systemic embolism, or major bleeding at 2 years.

Abstract Results: Primary outcome rates were similar between LAD < 40 mm and ≥ 40 mm groups (1.4% vs. 1.1%, $P=0.664$). In the patients with LAD <40 mm, the primary outcome occurred in the 5 patients (2.8%) of the continue OAC group only (absolute difference, -2.8% [95 CI, -5.1 to -0.4]). In those with LAD ≥ 40 mm, the primary outcome occurred in 1 patient (0.6%) in the discontinue OAC group and 3 patients (1.7%) in the continue OAC group (absolute difference, -1.1% [95% CI, -3.3 to 1.1]).

Abstract Conclusion: No statistically significant differences in outcomes were observed between OAC strategies across LA diameter strata. These findings suggest that post-ablation anticoagulation decisions may hinge more on sustained arrhythmia-free status than on atrial structural remodeling, supporting an

Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: ASSESSING THE EFFICACY AND SAFETY OF IMPLANTABLE CARDIOVERTER-DEFIBRILLATOR THERAPY IN BRUGADA SYNDROME: A SYSTEMATIC REVIEW AND RISK STRATIFICATION BASED PROPORTIONAL META-ANALYSIS OF 5,893 PATIENTS

Author Block: Derren Rampengan, Michael Hogipranata, Seba Al-gunaid, Juan Alessandro, Muhammad Iqhrammullah, Muhammad Reva, Ammar Nojaid, Arga Setyo Adji, Joan Harianto, Faculty of Medicine, Universitas Sam Ratulangi, Manado, Indonesia

Background: Brugada syndrome is associated with malignant ventricular arrhythmias in structurally normal hearts. Implantable cardioverter-defibrillators (ICDs) prevent sudden cardiac death, but shock-related harms complicate primary-prevention decisions.

Methods: PRISMA-guided systematic review was conducted (PROSPERO: CRD420251108370). Observational studies reporting outcomes after ICD implantation in Brugada syndrome were included. Risk of bias was assessed using ROBINS-I. A single-arm proportional meta-analysis was performed with random-effects models using R version 4.4.1 with the meta and metafor packages; heterogeneity (I^2) and funnel plots were evaluated.

Abstract Body: **Results:** Forty-five studies comprising 5,893 patients with Brugada syndrome who underwent ICD implantation. Across 32 studies ($n=3,912$), the pooled proportion of appropriate ICD shocks was 19% (95% CI 13-25; $I^2=94.6\%$). The rate of inappropriate shocks was 15% (95% CI 12-18; $I^2=88.4\%$) based on 32 studies ($n=4,091$). Cardiac mortality was 1% (95% CI 1-2; $I^2=0\%$) from 10 studies ($n=1,089$). Key clinical characteristics of the pooled ICD cohorts included syncope in 45% of patients (95% CI 38-51; 29 studies, $n=3,680$), documented ventricular arrhythmia prior to implantation in 21%, type-1 Brugada ECG pattern in 34%, family history of sudden cardiac death in 29% (95% CI 23-36; 25 studies, $n=2,900$), SCN5A mutation positivity in 13% (95% CI 8-18; 12 studies, $n=2,570$), and atrial fibrillation in 8% (95% CI 4-13; 10 studies, $n=2,197$). Most studies (36/45) were rated low risk of bias, with the remainder classified as moderate, unclear, or serious.

Conclusion: In ICD-treated Brugada patients, roughly 1 in 5 receives appropriate therapy while 1 in 7 experiences inappropriate shocks. Post-implant cardiac mortality remains low at 1%. These quantitative benchmarks support more precise counselling, individualized ICD decision-making, and programming strategies aimed at reducing shock burden. Long-term follow-up across cohorts shows stable event rates, reinforcing the clinical reliability and applicability of these pooled estimates in practice.

Session Title: Friday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: TRIGLYCERIDE-GLUCOSE INDEX AND CARDIOVASCULAR OUTCOMES IN ASIAN PATIENTS WITH ATRIAL FIBRILLATION

Author Block: YU-TING WANG, Chih-Chieh Huang, Jo-Hsin Chen, Jong-Shiuan Yeh, Department of Pharmacy, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan

Background: The triglyceride-glucose (TyG) index is an emerging surrogate marker of insulin resistance and has been associated with increased risks of cardiovascular diseases. However, its prognostic significance in patients with atrial fibrillation (AF), particularly in Asian populations remains unclear. This study aimed to evaluate the association between the TyG index and cardiovascular outcomes in Asian patients with AF.

Methods: We conducted a retrospective cohort study using the Taipei Medical University Clinical Research Database from 2013 to 2023. A total of 2,113 patients with AF and at least three annual blood glucose and lipid profile measurements were included. The primary outcome was a composite of cardiovascular events, including ischemic stroke, transient ischemic attack, myocardial infarction, heart failure hospitalization, and cardiovascular mortality. Accelerated failure time (AFT) models were used to estimate the association between TyG index and time-to-event outcomes.

Results: Among the 2,113 AF patients, 787 were aged ≥ 75 years and 1,326 were < 75 years. Patients were categorized into three groups based on their TyG index: group 1 (lowest, < 7.8), group 2 (medium, 7.8-8.8), and group 3 (highest, > 8.8). In elderly patients, those in the lowest TyG quartile had a significantly higher risk compared with those in the medium quartile (AFT time ratio: 0.28; 95% CI: 0.13-0.62; $p = 0.0017$). Patients in the highest quartile also demonstrated an increased risk (0.89; 95% CI: 0.63-1.25; $p = 0.4975$), though not statistically significant. In contrast, no significant differences were observed across TyG groups in younger patients. Subgroup analyses in elderly patients indicated that low TyG levels were associated with heart failure hospitalization and cardiovascular death, whereas high TyG levels were associated with greater thromboembolic risk.

Abstract Body:

Conclusion: The TyG index was associated with cardiovascular outcomes in Asian AF patients, especially older adults. A low TyG index identified elderly patients at higher risk of composite cardiovascular events. It may serve as a marker to improve cardiovascular risk stratification in elderly AF populations.

Session Title: Friday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: RISING NATIONAL MORTALITY FROM TYPE 2 DIABETES MELLITUS AND CARDIAC ARREST AMONG U.S. ADULTS: A 21-YEAR CDC WONDER ANALYSIS

Author Block: Mohammad Eisa Ali, [Song Kwan Kim](#), Eshal Saghir, Bismah Azam Ali, Muhammad Saad Hashmi, Nida Shoaib, Hozefa Mateen, Maryam Saghir, Ali Abdullah, Muhammad Ahsan, Nilay Bhatt, Maleeha Pandit, University of Pavia, Pavia, Italy

Background: Type 2 diabetes mellitus (T2DM) and cardiac arrest remain major contributors to adult mortality in the United States (U.S.), yet long-term national trends and demographic disparities in combined mortality have not been comprehensively evaluated. This study assessed 21-year mortality patterns to identify high-risk populations and geographic disparities.

Methods: A retrospective cohort analysis of adults aged ≥ 25 years was performed using the CDC WONDER database from 1999-2020. Age-adjusted mortality rates (AAMRs) per 100,000 population with 95% confidence intervals (CI) and annual percent change (APC) were calculated by year, sex, race, census region, and urban-rural classification. Trends were analyzed using Joinpoint regression.

Abstract Body: **Results:** A total of 258,675 T2DM and cardiac arrest-related deaths occurred from 1999-2020. The AAMR nearly tripled, rising from 3.38 to 10.01 per 100,000. Males consistently demonstrated higher mortality than females (overall AAMRs: 6.75 vs. 4.36). Hispanics had the highest overall AAMR (9.71), followed by non-Hispanic Asian or Pacific Islanders (8.50) and non-Hispanic American Indian or Alaska Native individuals (8.44). Mortality was highest in the Western region (10.51), with California contributing the largest state-level burden. Metropolitan areas showed higher overall AAMRs than nonmetropolitan areas (5.52 vs. 4.84). Across most demographic subgroups, sharp accelerations in mortality occurred after 2014, with APC values exceeding 9% in several strata.

Conclusion: Mortality related to T2DM and cardiac arrest has risen substantially over the past two decades, with disproportionate burdens among males, older adults, Hispanic and Indigenous populations, and residents of

metropolitan and Western U.S. regions. These findings underscore the need for targeted prevention strategies emphasizing early cardiometabolic risk identification, aggressive risk factor control, and improved access to cardiovascular care for vulnerable demographic groups.

Session Title: Friday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: ASSOCIATION OF RACE WITH CARDIOVASCULAR RISK ESTIMATES AND STATIN UTILIZATION

Author Block: Ramzi Ibrahim, Abdelrahman Hafez Hafez, Kamal Awad, Hoang Nhat Pham, Kwan S. Lee, Chadi Ayoub, Reza Arsanjani, Mayo Clinic, Scottsdale, AZ, USA, University of Arizona, Tucson, AZ, USA

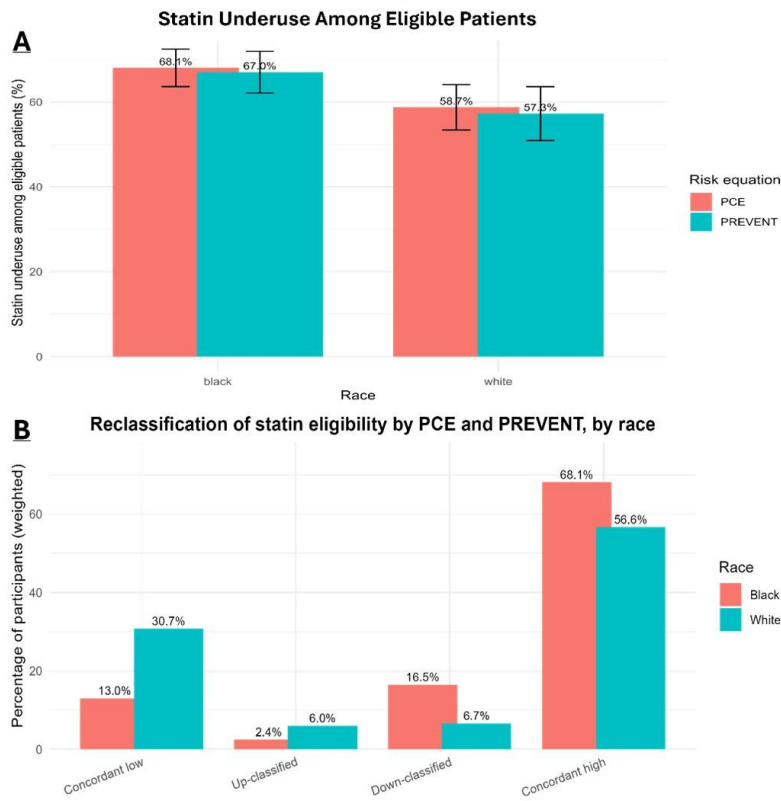
Abstract Body: **Background:** Whether cardiovascular risk estimation aligns with real-world statin use across racial groups remains uncertain. We used NHANES 2013-2023 to examine differences in ASCVD (PCE) and PREVENT 10-year risk estimates and statin utilization among primary-prevention Black and White adults.

Methods: We conducted a survey-weighted cross-sectional analysis including adults ≥ 18 years without prior ASCVD. Risk scores were calculated using standardized NHANES inputs, and statin eligibility was defined as 10-year risk $\geq 7.5\%$, LDL > 190 mg/dL, or diabetes. Statin underuse was defined as eligibility without current statin therapy. We used survey-weighted quasibinomial regression to evaluate associations between race and statin underuse.

Results: Black adults had substantially higher 10-year risk estimates by both equations. Mean ASCVD risk was 19% in Black adults versus 14% in White adults ($p < 0.001$). PREVENT 10-year risk was similarly higher among Black participants (12% vs 10%, $p = 0.014$). In multivariable survey-weighted models, White race was associated with 26% lower odds of statin underuse compared with Black race (OR 0.735, $p = 0.038$). Older age (OR 0.95 per year, $p < 0.001$) and higher BMI (OR 0.96 per kg/m^2 , $p = 0.045$) were also associated with lower odds of underuse.

Conclusion: Despite higher predicted cardiovascular risk, Black adults had persistently lower statin utilization, demonstrating treatment gaps not

explained by calculated risk.



Session Title: Friday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: METABOLOMIC INSIGHTS INTO THE LINK BETWEEN AIR POLLUTION AND ASCVD: HETEROGENEITY BY SOCIOECONOMIC STATUS AND GENETIC RISK

Author Block: Zhi Lv, Peiqi Liu, Kexin Li, Chang Liu, Yao Ma, Dengfeng Gao, The Second Affiliated Hospital, Xi'an Jiaotong University, Xi'an, People's Republic of China

Background: Air pollution contributes to atherosclerotic cardiovascular disease (ASCVD), yet its metabolic pathways and population heterogeneity remain insufficiently characterized.

Methods: In 218,464 UK Biobank participants, annual exposures to NO₂, NO_x, PM_{2.5}, and PM_{2.5} absorbance were assessed. Elastic net regression identified pollutant-related metabolites, which were combined into metabolic signatures. Associations among pollutants, metabolic signatures, and ASCVD were evaluated using Cox models and covariate-balanced generalized propensity score (CBGPS) analyses. Mediation analysis quantified the proportion of pollution effects explained by metabolic signatures, and effect modification by socioeconomic status (SES) and polygenic risk score (PRS) was tested.

Abstract Body: **Results:** We identified 68, 51, 41, and 36 metabolites associated with NO₂, NO_x, PM_{2.5}, and PM_{2.5} absorbance, respectively. All metabolic signatures showed independent associations with ASCVD (hazard ratio [HR] range 1.04-1.12). Pollutants were consistently related to higher ASCVD risk (HR 1.03-1.06), with concordant findings in CBGPS models. Metabolic signatures mediated 4.18%-12.90% of pollution-ASCVD associations. Low SES substantially amplified pollution-related risk, whereas PRS did not meaningfully modify effects.

Conclusion: Pollution-related metabolic signatures were independently associated with ASCVD and partially mediated the relationship between pollution exposure and ASCVD, providing molecular evidence linking environmental exposures to cardiovascular risk. Socioeconomic disadvantage heightened vulnerability, underscoring the need for risk stratification and equity-focused prevention in pollution-affected populations.

Session Title: Friday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: INDEPENDENT ASSOCIATION OF PLASMA FATTY ACID PHENOTYPES WITH RESIDUAL CARDIOVASCULAR RISK AND STRUCTURAL PLAQUE VULNERABILITY: A MULTI-COHORT STUDY

Author Block: Yuan Wang, Chaohui Han, Jiahui Yao, yanjing feng, Chang Liu, Fuxian Ren, Dengfeng Gao, Department of Cardiology, The Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, People's Republic of China

Abstract Body:

Background: Residual cardiovascular risk persists despite optimal LDL reduction. We derived a latent metabolic phenotype to determine if qualitative fatty acid composition predicts structural plaque instability and long-term major adverse cardiovascular events (MACE) beyond traditional risk factors.

Methods: Metabolic phenotypes were identified via unsupervised clustering of gas chromatography-mass spectrometry profiles in a discovery cohort (n=201) undergoing intracoronary optical coherence tomography (OCT). External validation utilized the UK Biobank (n=263,481) using nuclear magnetic resonance metabolomics with a primary endpoint of MACE.

Results: A high-risk "Phenotype B" emerged, characterized by systemic omega-3 depletion and elevated omega-6/omega-3 ratios. In the discovery cohort, Phenotype B carriers exhibited significantly thinner fibrous caps (median 68.0 vs 94.2 μm ; $p=0.003$) and higher prevalence of thin-cap fibroatheroma (TCFA) (59.2% vs 30.0%; $p=0.041$). In validation (median 13.8 years), Phenotype B predicted incident MACE independent of traditional factors (adjusted hazard ratio [HR] 1.12, 95% CI 1.08-1.16; $p<0.001$). Risk was highest for cardiovascular death (HR 1.22). Mediation analysis attributed 72% of excess risk to metabolic pathways (inflammation, glycemia), though a significant direct effect (28%) remained.

Conclusion: A specific fatty acid signature independently predicts structural plaque vulnerability and fatal cardiovascular events. This phenotype captures inflammatory risk driven by substrate that is invisible to standard panels. These findings support precision risk stratification to identify candidates for targeted eicosapentaenoic acid stabilization therapy.

Session Title: Friday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: CLOSING THE GENDER GAP IN HEART ATTACK RECOGNITION: A SIMPLE INTERVENTION THAT REVERSES GENDER BIAS IN HEART ATTACK TRIAGE DECISIONS

Author Block: Muhammad Ammar Hussain, Erfan Hatami, Amina Nadeem, Azerbaijan Medical University, Baku, Azerbaijan

Background: Women frequently present with atypical heart attack symptoms, contributing to delayed recognition and treatment. Public understanding of these presentations remains limited. This study evaluated baseline gender bias in recognizing heart attack symptoms and assessed whether a brief educational leaflet could rapidly reduce this gap.

Methods: A randomized, supervised survey was conducted among 100 adults from the same region but with diverse cultural, educational, and professional backgrounds (69 women, 31 men; 74% medically affiliated). Participants completed the survey with continuous access to investigators, either in person or electronically, to ensure standardized instructions. The baseline questionnaire included two matched clinical scenarios: a man with classic crushing chest pain and a woman with atypical symptoms (shortness of breath, nausea, upper-back/jaw pain, and unusual fatigue). Participants then viewed a one-page educational leaflet on women's heart attack symptoms and repeated key questions.

Abstract Body:

Results: Baseline responses showed a clear gender recognition gap: 35% believed chest pain must always be present; 84% rated the man as likely having a heart attack versus 37% for the woman; 77% recommended immediate care for the man versus 38% for the woman; and 35% prioritized the man in triage vs 6% woman, while only 57% selected equal priority. After the educational intervention, understanding improved markedly: recognition that heart attacks can occur without chest pain rose from 65% to 88%; likelihood ratings for the woman increased from 37% to 85%; immediate care recommendations increased from 38% to 80%; and equal triage priority rose from 57% to 71%, while 15% now prioritized the woman vs 11% still prioritizing the man.

Conclusion: A significant gender bias affects recognition and perceived urgency of heart attack symptoms, even among medically affiliated individuals. A brief, low-cost educational leaflet produced substantial, immediate improvements in accuracy, urgency assessment, and equitable triage decisions. This simple intervention may help reduce gender-based delays in cardiac care.

Session Title: Friday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: ASSOCIATION BETWEEN EPICARDIAL FAT VOLUME AND PLAQUE CHARACTERISTICS ON CORONARY COMPUTED TOMOGRAPHY ANGIOGRAPHY

Author Block: Lan Huong Thi Le, Vinh Nguyen Pham, Tam Anh General Hospital, Ho Chi Minh city, Viet Nam

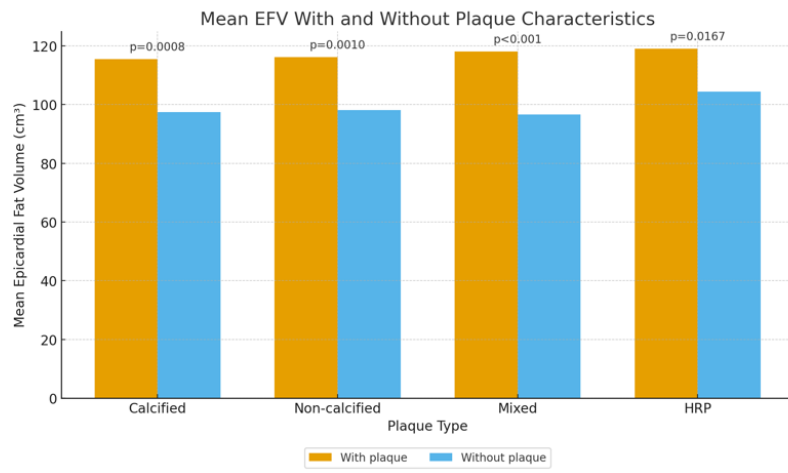
Background: Epicardial adipose tissue is an active inflammatory fat depot implicated in coronary atherosclerosis. This study aimed to investigate the association between epicardial fat volume (EFV) and coronary plaque characteristics, including calcified plaque, non-calcified plaque, mixed plaque, and high-risk plaque (HRP).

Methods: This cross-sectional study included 213 patients undergoing CCTA for suspected or known coronary artery disease. EFV was quantified from contrast CT images. Plaques were classified as calcified, non-calcified, or mixed, and HRP. Multivariable logistic regression was performed with adjustment. Receiver ROC curve analysis was used to assess the discriminative ability of EFV.

Abstract Body:

Results: Mean EFV was $108.8 \pm 39.4 \text{ cm}^3$. EFV was significantly higher in patients with calcified, non-calcified, mixed plaques, and HRP (all $p < 0.05$). After multivariable adjustment, EFV (per 10 cm^3 increase) remained independently associated with non-calcified plaque (OR 1.10, 95% CI 1.01-1.21; $p = 0.039$) and mixed plaque (OR 1.11, 95% CI 1.01-1.22; $p = 0.036$). Associations with calcified plaque and HRP were attenuated. EFV showed moderate discrimination for non-calcified and mixed plaques (AUC 0.665 and 0.677), with an optimal cut-off around 110 cm^3 .

Conclusion: Higher EFV is independently associated with non-calcified and mixed coronary plaques on CCTA, supporting the role of epicardial fat in plaque vulnerability and its potential value as a non-invasive imaging biomarker.



Session Friday Poster Session
Title:

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing PREDICTING LEFT VENTRICULAR REVERSE REMODELING IN STEMI:
Title: DEVELOPMENT AND VALIDATION OF A MULTIMODAL RISK SCORE

Author Pranabananda Pal, Tushar Kanti Patra, Sankar Chandra Mandal, Saroj Mondal,
Block: Goutam Dutta, IPGMER AND SSKM HOSPITAL KOLKATA, KOLKATA, India

Abstract
Body:

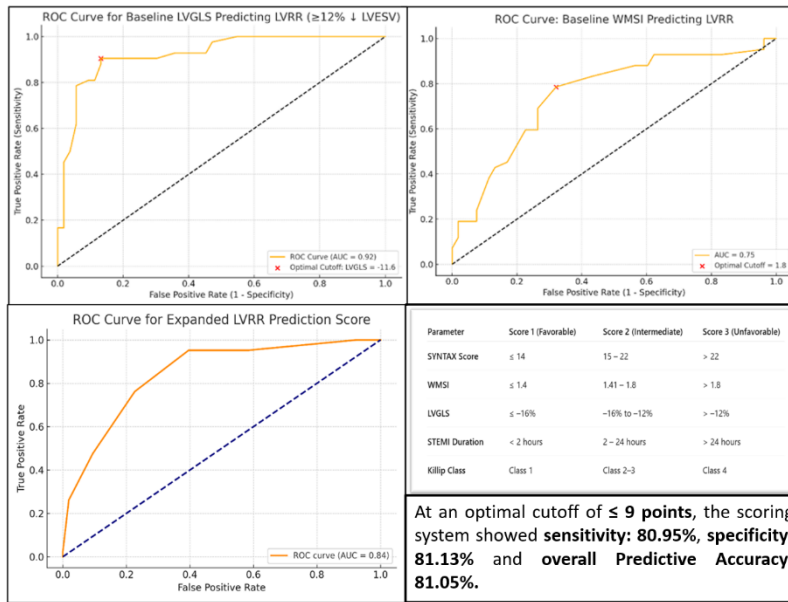
Background: Left ventricular reverse remodeling (LVRR) is a major determinant of long-term prognosis after ST-elevation myocardial infarction (STEMI). Early prediction of LVRR after primary percutaneous coronary intervention (PCI) may guide individualized post-infarct management. This study aimed to formulate and validate a composite echocardiographic-angiographic scoring system for early LVRR prediction.

Methods: In this prospective observational study, 95 STEMI patients undergoing successful primary PCI were evaluated at baseline using left ventricular ejection fraction (LVEF), wall motion score index (WMSI), global longitudinal strain (LVGLS), SYNTAX score, Killip class, and symptom-to-PCI time. Each variable was assigned a score (1-3), generating a 15-point composite model stratifying patients into Low (5-7), Moderate (8-11), and High (12-15) risk groups. LVRR and 6-month major adverse cardiovascular events (MACE) were assessed.

Results: LVRR occurred in 44.2% of patients. Rates of LVRR significantly differed across subgroups: 75% (Low), 47.6% (Moderate), and 8.3% (High). The model showed strong predictive power (AUC 0.84); a cutoff ≤ 9 achieved 80.95% sensitivity and 81.13% specificity.

Conclusion: This novel composite scoring system reliably predicts LVRR after STEMI and serves as a practical bedside tool integrating strain imaging, angiographic complexity, and clinical status to enhance post-PCI risk

stratification and outcomes.



Session Title: Friday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: VENTRICULAR FIBRILLATION AS THE INITIAL MANIFESTATION OF SCAD-TAKOTSUBO OVERLAP IN IDIOPATHIC THROMBOCYTOPENIC PURPURA: A CASE OF THERAPEUTIC DILEMMA

Author Block: Laxi Thaker, Deep Chahodiya, Navjot Kaur, Keshvi Chauhan, [Hyunkyung Yim](#), Government Medical College, Surat, Surat, India, University of Wisconsin Madison, Madison, WI, USA

Abstract Body: **Background:** Ventricular fibrillation arrest is an uncommon presentation of non-atherosclerotic acute coronary syndromes (ACS) (ACS). The coexistence of spontaneous coronary artery dissection (SCAD) and Takotsubo cardiomyopathy is rare and often complicates the diagnosis and management. **Case:** A 42-year-old woman with idiopathic thrombocytopenic purpura (ITP) and iron-deficiency anemia presented with out-of-hospital ventricular fibrillation arrest. Return of spontaneous circulation was achieved. The electrocardiogram showed anterolateral ST-segment elevation with T-wave inversions and QTc prolongation.

Decision-making: Coronary angiography revealed a high-grade, linear proximal-to-mid left anterior descending artery stenosis with preserved TIMI-3 flow, consistent with SCAD. Ventriculography demonstrated apical akinesis with basal hyperkinesis, confirming cardiomyopathy. Because of bleeding risk from ITP, dual antiplatelet therapy was avoided and was managed with aspirin monotherapy and guideline-directed therapy for reduced ejection fraction. Left ventricular function recovered completely (from 35% to normal) within 12 days.



Figure (1): Post-ROSC EKG showing anterolateral STEMI with prolonged QTc. T-wave inversions are present along with persistent ST-segment elevation; **Figure (2):** Coronary angiography showing a high-grade linear stenosis from the proximal to mid LAD; **Figure (3):** TTE demonstrating akinesis of the mid anterior, apical, and inferoapical walls with hyperkinesis of the basal anterior and inferior walls.

Conclusion: This case illustrates a rare overlap of SCAD and Takotsubo cardiomyopathy presenting as ventricular fibrillation arrest in a young woman with ITP, creating an antithrombotic dilemma. It highlights the importance of individualized management of complex non-atherosclerotic ACS.

Session Title: Friday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: DETERMINANTS OF HOSPITAL STAY AFTER MYOCARDIAL INFARCTION: LARGE LANGUAGE MODELS HIGHLIGHT COMORBIDITY BURDEN AS A KEY DRIVER OF OUTCOMES IN A LARGE TERTIARY CARDIAC CENTRE

Author Block: Vanessa Zi Kun Lim, Chee Tang Chin, fangyee chee, Yee How Lau, Jieyin Tan, Chua Heng Lee Hendy, Weiting Huang, Jonathan Yap, Terrance Siang Jin Chua, Khung Keong Yeo, Anders Olof Sahlen, National Heart Centre Singapore, Singapore, Singapore

Background: Length of stay (LOS) in myocardial infarction (MI) patients represents a closely tracked outcome metric for Cardiology services, with a general decline over time. However, rising comorbidity burden may now reverse this trend. The Charlson Comorbidity Index (CCI) is a validated tool for quantifying disease burden, but its abstraction is laborious. Large language models (LLMs) are an attractive option for chart abstraction but uptake so far is very limited.

Abstract Body: **Methods:** We conducted a single-centre study of n=6,129 MI admissions at a tertiary cardiac hospital from May 2018 to August 2024. Data were extracted from electronic medical records and CCI were derived using LLM, with manual validation in a subset of 10% of patients ($R^2=0.81$).

Results: We found an increase in CCI over time (0.09 (CI95:0.06-0.12) points per year); more diabetes, hypertension, renal disease, lymphomas, and metastatic solid tumors), and a concomitant rise in LOS by 6.5 (CI95: 3.9-9.1) hours annually. Time-to-discharge was analyzed with competing-risk regression adjusting for in-hospital death, with clustering on individual patients. After adjusting for covariates not already included in the CCI (e.g., age, race, smoking, MI type, atrial fibrillation, revascularization), CCI emerged as the most robust and precise predictor of length of stay ($p<2\times 10^{-16}$), with no significant effect by calendar time ($p=0.17$). A significant interaction was found between CCI and calendar year: the impact of comorbidity is presently growing.

Conclusion: These results validate the use of an LLM for chart abstraction and

show that rising patient complexity is reversing previous downtrends in LOS in MI patients.

Session Title: Friday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: UNMASKING THE RELATIONSHIP BETWEEN CORONARY RETROGRADE FLOW AND PROXIMAL PLAQUE BY VISUALIZATION TOOL BASED ON DEEP LEARNING

Author Block: Loc Tri Vu, [Ha Khanh Linh Vo](#), Huu Hao Nguyen, Minh Viet Vo, My Nguyen, Thach N. Nguyen, Tan Tao University, Tay Ninh, Viet Nam, Cardiovascular Research Laboratory, Methodist Hospital, Merrillville, IN, USA

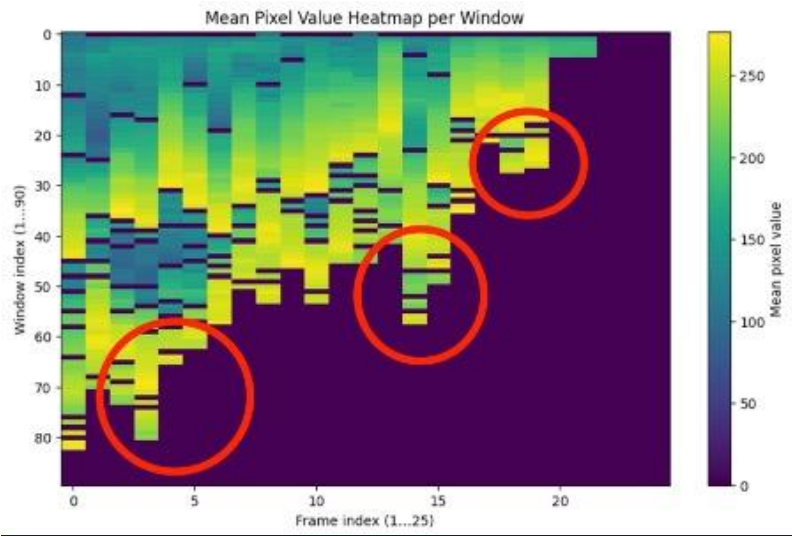
Background: Turbulent flow, caused by the collision of retrograde flow (systole) and antegrade flow (diastole), initiates plaque formation. Since visualizing retrograde flow is difficult, how can Deep Learning (DL) be used to visualize it and localize plaque?

Methods: Patients with unstable angina underwent dynamic angiography. The coronary artery was injected with contrast. After injection, native blood (white) replaced the contrast (black). The contrast's movement, which reveals retrograde or stagnant flow, was recorded at 15 frames/second for analysis. In parallel, a DL model was built for coronary segmentation. The segmented coronary artery was then divided into sliding windows. Based on these windows, the movement of the contrast was analyzed, which was quantitatively represented by the sum of the pixel values within each window across consecutive frames. Finally, a heatmap was assembled for visualization (figure). The relationship between lesion localization and turbulent flow was then investigated.

Abstract Body:

Results: Forty-eight patients met the inclusion criteria. A combined analysis of the angiogram and heatmaps generated by the DL model suggested that 83.3% of these patients had retrograde flow (red circle). 79.2% had moderate-to-severe lesions at the location of turbulent flow. The relationship between turbulent flow and lesion severity was found to be statistically significant ($p < 0.05$).

Conclusion: With the support of DL, we can see the relationship between the lesion and turbulent flow.



Session Title: Friday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: CORONARY ARTERY ANEURYSM AND THROMBOSIS ASSOCIATED MYOCARDIAL INFARCTION IN A 24-YEAR-OLD WITH MULTISYSTEM INFLAMMATORY SYNDROME AND HUMAN IMMUNODEFICIENCY VIRUS

Author Block: Abbey Grbac, Olivia Slifirski, Vincenzo Somma, David Bridge, Matthew Brooks, The Royal Melbourne Hospital, Melbourne, Australia

Background: Multisystem Inflammatory Syndrome in Children (MIS-C) is a rare complication of SARS-CoV-2 resulting in severe delayed systemic hyperinflammatory disease. The cardiovascular system is often involved with complications including coronary artery aneurysm (CAA). The inflammatory nature of Human Immunodeficiency Virus (HIV) can also result in unique cardiovascular complications.

Case: 24-year-old male with a background of MIS-C and HIV presented with chest pain and anterior ST segment elevation complicated by three cardiac arrests with pulseless ventricular tachycardia requiring direct cardioversion.

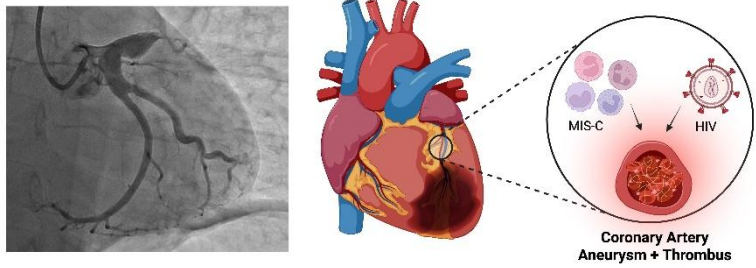
Abstract Body: Angiogram showed left anterior descending (LAD) and left circumflex CAA with an occlusive thrombus in the proximal LAD.

Decision-making: The LAD was successfully wired with a workhorse coronary wire. Multiple balloon inflations, intracoronary nitrates, intravenous tirofiban and thrombus aspiration were attempted, however there remained no flow in the LAD. Intracoronary thrombolysis with alteplase was then utilised with further balloon inflations and thrombus aspiration resulting in removal of a large thrombus with restoration of flow. Stenting was not performed due to the significant size discrepancy, residual thrombus and no clear culprit atherosclerotic lesion.

Conclusion: This is the first reported case of CAA associated with both MIS-C and HIV resulting in thrombotic occlusion. There are no clear guidelines on the

management of coronary aneurysms in these populations.

Coronary artery aneurysm and thrombosis associated myocardial infarction in a 24-year-old with Multisystem Inflammatory Syndrome and Human Immunodeficiency Virus



Session Title: Friday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: PHAEOCHROMOCYTOMA PRESENTED AS REVERSE TAKOTSUBO CARDIOMYOPATHY

Author Block: Yong Xin Tan, Cheng Hsin general hospital, Taipei, Taiwan

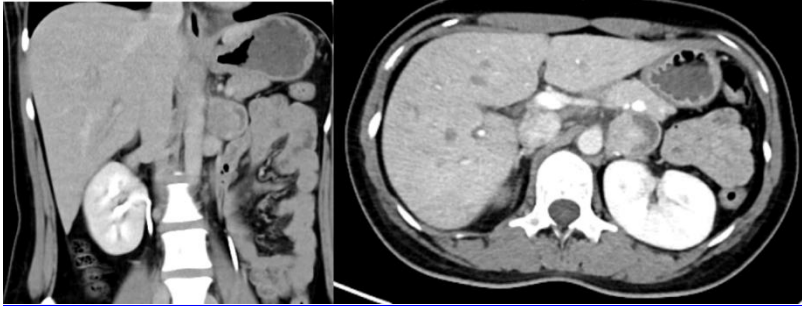
Abstract Body:

Background: A 35-year-old woman with a history of follicular thyroid carcinoma status post thyroidectomy presented with several hours of chest tightness, dyspnea, and cold sweating.

Case: BP on arrival was markedly elevated at 206/139 mmHg. ECG showed diffuse ST-segment depression and ST elevation in aVR. Cardiac biomarkers were significantly elevated. TTE revealed mildly reduced LVEF (45%) with basal hypokinesis, raising suspicion for reverse Takotsubo cardiomyopathy.

Decision-making: Coronary angiography revealed no obstructive coronary artery disease, fulfilling criteria for myocardial infarction with non-obstructive coronary arteries (MINOCA). Biochemical testing revealed markedly elevated urine catecholamines along with elevated aldosterone and cortisol levels, consistent with catecholamine-secreting tumor physiology. Abdominal ultrasound showed a left adrenal pheochromocytoma which is confirmed by abdominal CT. The patient continued to experience headache and Brain MRI showed cerebral vasospasm (left proximal M2).

Conclusion: This case highlights pheochromocytoma as a rare but critical cause of MINOCA and catecholamine-induced cardiomyopathy. In patients presenting with hypertensive emergency, myocardial injury, and non-obstructive coronaries, screening for catecholamine excess is essential. Early recognition is key to preventing neurologic and cardiovascular complications and guiding definitive management.



Session Title: Friday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: EFFICACY AND SAFETY OF COLCHICINE IN ACUTE CORONARY SYNDROME: A CLINICAL SYSTEMATIC REVIEW AND META-ANALYSIS WITH META-REGRESSION OF 14,298 RANDOMIZED PATIENTS

Author Block: Derren Rampengan, Stevanus Surya, Nathanael Jonathan, Diski Saisa, Michael Owen Hogipranata, Ketut Ganesha Putra Anugraha, Jade Rampengan, Arga Setyo, Faqrizal Qhabibi, Muhammad Iqhrammullah, Faculty of Medicine, Universitas Sam Ratulangi, Manado, Indonesia

Abstract Body: **Background:** Atherosclerosis-induced ischemia is a major cause of acute coronary syndrome (ACS), with systemic inflammation playing a central role in its pathogenesis. Colchicine, an anti-inflammatory agent traditionally used in gout, has been investigated for its potential to reduce cardiovascular inflammation and improve outcomes in ACS. This systematic review and meta-analysis aimed to evaluate the efficacy and safety of colchicine in ACS patients based on evidence from randomized controlled trials

Methods: This meta-analysis was conducted following the PRISMA 2020 guidelines (PROSPERO CRD420251049859). A comprehensive literature search was performed across PubMed, Science Direct, Scopus, ProQuest, Cochrane, Web of Science, Epistemonikos, ClinicalTrials, And Wiley, as of december 2025. The quality of included studies was assessed using Cochrane RoB 2.0 tool. Meta-analysis was performed on Review Manager 5.4 software. Effect sizes were synthesized using odds ratios for dichotomous outcomes and standardized mean differences for continuous outcomes. The certainty of evidence for each outcome was evaluated using the GRADE approach.

Results: Across 15 included studies with a total of 14,298 patients, predominantly being low risk of bias, colchicine reduced major adverse cardiovascular events (OR: 0.79 [95% CI: 0.68 to 0.90]) and myocardial infarction, while lowering C-reactive protein (SMD = -1.07 [95% CI: -1.75 to -0.40]). Urgent revascularization showed an insignificant reduction (OR: 0.57 [95% CI: 0.33 to 1.00]) and stroke effects were uncertain. All-cause and cardiovascular mortality were directionally lower but not statistically significant. Gastrointestinal adverse events were more frequent with

colchicine significantly (OR: 1.80 [95% CI: 1.26 to 2.58]).

Conclusion: Colchicine can be used as anti-inflammatory therapy in secondary prevention among ACS patients, particularly due to its potential in improving cardiovascular risk and systemic inflammation. However, its use was accompanied by more frequent gastrointestinal side effects, warranting careful clinical consideration in balancing its benefits against concerns regarding tolerability and side effects.

Session Title: Friday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: HEART FAILURE MANAGEMENT WITH GUIDELINE DIRECTED MEDICAL THERAPY (BISOPROLOL VS CARVEDILOL) IN KASHMIR POPULATION: A PROSPECTIVE STUDY

Author Block: Hakim Irfan Showkat, SADAF ANWAR, SRINAGAR MEDCITY HEART INSTITUTE, SRINAGAR, India

Background: Beta-blockers, including carvedilol and bisoprolol, are commonly recommended for the management of heart failure with reduced ejection fraction (HFrEF). Different doses and their relative efficacy in reducing morbidity & mortality cause are contradictory. The present study evaluated the effects of Carvedilol and Bisoprolol in different doses on Left Ventricle Ejection Fraction (LVEF), Heart Rate, Blood Pressure, Arrhythmias, Inflammatory markers, MACE, Hospital Admission & Mortality in patients with HFrEF with guideline directed medical or device therapy (GDMT)

Methods: A prospective study involving 138 individuals presenting with symptomatic HFrEF classified as New York Heart Association (NYHA) class III-IV. Participants were randomized into two groups, receiving either carvedilol or bisoprolol at dosages determined by physician discretion in conjunction with GDMT. Clinical parameters and objective evidence were assessed at baseline and 6 to 12 months of follow-up.

Abstract Body:

Results: Male predominance was observed in both groups (63.33% for carvedilol, 56.67% for bisoprolol). The majority of patients were NYHA class III. Both treatment groups demonstrated statistically significant improvements following three months of therapy ($p \leq 0.05$). In the carvedilol cohort, mean LVEF increased from 32.26% to 46.4%, heart rate and blood pressure decreased from 104.23 to 85.13 bpm and from 125.6/83.3 to 91.3/62.5 mmHg, respectively. The bisoprolol group showed improvements from 31.5% to 45.3% LVEF, 102.8 to 72.4 bpm, and 127.4/82.2 to 102.2/74.2 mmHg, respectively. No statistically significant differences were evident between the cohorts ($p > 0.05$). Hospitalization due to hypotension occurred more frequently in the carvedilol group (22.2% vs. 5.4% for bisoprolol). Adequate rate control was observed in 54% of carvedilol and 72% of high-dose bisoprolol-treated

patients. Mortality rates were higher in the carvedilol cohort, which reached statistical significance

Conclusion: Bisoprolol, administered twice daily at either low or high dose, demonstrated superiority in reducing rates of hospitalization, hypotension, and mortality compared to carvedilol in patients with HFrEF

Session Friday Poster Session
Title:

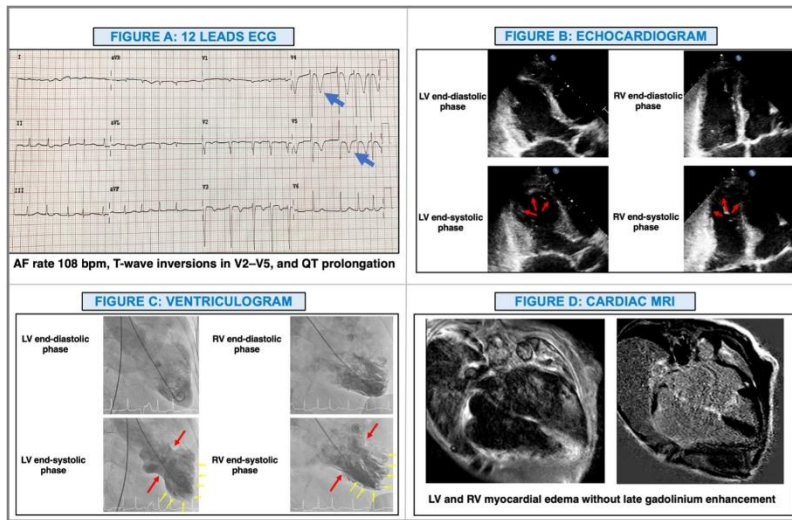
Topic 1: Heart Failure and Cardiomyopathies

Publishing WHEN NOT ONLY ONE CHAMBER OF THE HEART BREAKS: A BIVENTRICULAR
Title: TAKOTSUBO SYNDROME

Author Pratya Rawangban, Anusith Tunhasiriwet, Sivayos Deetes, Maethas
Block: Panyawongkhanti, Rawish Wimolwattanaphan, TIPAKORN NEAMTHONG,
Wipawee Chueami, Chanwit Wuttichaipradit, Chulabhorn Hospital, Bangkok,
Thailand

Abstract
Body: **Background:** Takotsubo syndrome (TTS) is a transient, stress-induced cardiomyopathy typically involving the left ventricle (LV). Right ventricular (RV) involvement, though less common, can worsen hemodynamics and outcomes. **Case:** An 81-year-old man with diabetes, atrial fibrillation, and newly diagnosed lymphoma presented with acute dyspnea and hypotension. The 12-lead ECG showed atrial fibrillation (rate 108 bpm), deep T-wave inversions in V2-V5, and QT prolongation (Fig. A). Troponin T was 37 ng/dL and NT-proBNP 20,543 pg/mL. Echocardiography revealed apical ballooning with basal hyperkinesia of both LV and RV (Fig. B), accompanied by severe functional mitral and tricuspid regurgitation. Coronary angiography was unremarkable. Ventriculography confirmed biventricular apical ballooning (Fig. C), and cardiac MRI demonstrated myocardial edema without late gadolinium enhancement (Fig. D), consistent with TTS. **Decision-making:** Biventricular TTS often presents with cardiogenic shock due to RV failure. Early identification of RV involvement provides crucial prognostic and therapeutic guidance. Guideline-directed medical therapy led to gradual hemodynamic recovery. **Conclusion:** This case highlights the importance of recognizing RV involvement

in Takotsubo syndrome for optimal management and prognosis.



Session Title: Friday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: 1. RIGHT VENTRICULAR FAILURE IN CONNECTIVE TISSUE DISEASE-ASSOCIATED PULMONARY ARTERIAL HYPERTENSION (CTD-PAH): A THERAPEUTIC CHALLENGE OF HEMODYNAMIC BALANCE.

Author Block: Moganapriya Gunasegaren, Lin Htet Maung, Joo Hor Tan, Tan Tock Seng Hospital, Singapore, Singapore

Background: 1. Management of connective tissue disease-related pulmonary hypertension with right ventricular failure 2. Optimal management of right ventricular failure in CTD-PAH necessitates a personalized long-term strategy for pharmacotherapy and follow-up, formulated through multidisciplinary collaboration.

Case: A 36-year-old woman with a significant history of Group 1 pulmonary arterial hypertension (PAH) with secondary to mixed connective tissue disease overlap syndrome (systemic lupus erythematosus and systemic sclerosis), presented with a one-week history of fever, non-productive cough, and gastrointestinal symptoms including diarrhoea, nausea, vomiting, and abdominal pain. She has severe group 1 PAH which was complicated by right ventricular failure. Her previous right heart catheterisation in Dec 2021 showed a mean pulmonary arterial pressure (MPAP) of 59 mmHg.

Abstract Body: **Decision-making:** She was diagnosed to have mixed septic and cardiogenic shock, driven by a severe COVID-19 infection with concurrent RV volume overload complicated by Type 1 respiratory failure. Her vasopressor was switched from noradrenaline to vasopressin as it was deemed to have less pulmonary vasoconstriction effect. Continuous iv furosemide infusion was started for treatment of right ventricular volume overload. Inhaled iloprost, which is a potent pulmonary vasodilator, was started with aim to reduce right ventricular afterload. IV milrinone was initiated as a short acting inodilator and its positive inotropy effect. There was a plan for trial of intravenous epoprostenol with a right heart catheterisation prior should her condition continue to deteriorate.

Conclusion: She was started on inhaled iloprost (a prostacyclin analogue) for pulmonary vasodilation for right ventricle afterload reduction and later

restarted on macitentan, an FDA-approved endothelin receptor antagonist for pulmonary arterial hypertension (WHO Group I), which is commonly used in CTD-PH. Phosphodiesterase-5 inhibitors and soluble guanylate cyclase stimulators are also effective in reducing pulmonary vascular resistance and improving RV function.

Session Title: Friday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title:

SECUNDUM ATRIAL SEPTAL DEFECT WITH LARGE LEFT-TO-RIGHT SHUNT, HYPERKINETIC PULMONARY HYPERTENSION, MITRAL VALVE PROLAPSE WITH SEVERE MITRAL REGURGITATION, MODERATE-TO-SEVERE TRICUSPID REGURGITATION, AND LONG-RP SUPRAVENTRICULAR TACHYCARDIA IN A 41-YEAR-OLD FILIPINO WOMAN

Author Block: Frinz Moey Rubio, Francis Solomon Claridades, Richard Henry II Tiongco, Heart Institute, St. Luke's Medical Center Global City, Taguig City, Philippines

Abstract Body:

Background: Secundum atrial septal defect (ASD) may remain undetected until adulthood, when chronic left-to-right shunting leads to right-sided volume overload, pulmonary hypertension and atrial arrhythmias. When mitral valve prolapse with significant mitral regurgitation coexists, hemodynamics become more complex and management less straightforward.

Case: A 41-year-old Filipino woman with long-standing uninvestigated cardiomegaly presented with progressive exertional dyspnea, chest heaviness and long-RP supraventricular tachycardia. Imaging revealed a large secundum ASD with marked right-sided dilatation, severe pulmonary hypertension, anterior leaflet mitral valve prolapse with severe mitral regurgitation and moderate to severe tricuspid regurgitation. Right heart catheterization showed a large left-to-right shunt (Qp:Qs 3.7) with low pulmonary vascular resistance (2.9 Wood units), consistent with hyperkinetic pulmonary hypertension.

Decision-making: Because her pulmonary hypertension was flow-related and potentially reversible, vasodilator therapy was avoided and defect closure was recommended. Surgical repair was chosen over device closure due to severe mitral and tricuspid valve disease. A fenestrated ASD patch was created to provide a controlled “pop-off” mechanism, allowing temporary right-to-left shunting during periods of high right-sided pressure and reducing the risk of acute right ventricular failure immediately after closure. She concomitantly underwent bioprosthetic mitral valve replacement to support future desire of pregnancy, tricuspid annuloplasty, and left atrial appendage ligation.

Conclusion: This case highlights the need to distinguish hyperkinetic pulmonary hypertension from fixed pulmonary vascular disease, and to

combine invasive hemodynamic assessment with multimodality imaging when planning intervention. It also illustrates the value of individualized surgical strategy, including fenestration and valve choice, in optimizing outcomes for adults with complex congenital heart disease.

Session Title: Friday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: VERICIGUAT FOR HFREF

Author Block: FAIZ ABBAS, MEDCARE NEPHROLOGY, LAHORE, Pakistan

Abstract Body:

Background: Vericiguat, a novel oral soluble guanylate cyclase stimulator given in patients with heart failure with Reduced ejection fraction who had recently been hospitalized or had received intravenous diuretic therapy. Vericiguat is a soluble guanylate cyclase (sGC) stimulator that enhances the nitric oxide (NO) signaling pathway, leading to increased production of cyclic guanosine monophosphate (cGMP), which promotes vasodilation and improves cardiovascular function.

Methods: In this phase 3, randomized, double-blind, placebo controlled trial, we assigned 500 patients with chronic heart failure (New York Heart Association class III, or IV) and an Ejection fraction of less than 45% to receive vericiguat (target dose, 10 mg once daily) or placebo, in addition to guideline based medical therapy, the primary outcome was a composite of death from cardiovascular causes or first hospitalization for heart failure.

Results: Over a median of 7 months, a primary-outcome event occurred in 375 of 500 patients in the vericiguat group and in 125 patients in the placebo group. It reduced risk of cardiovascular death or heart failure hospitalization in adults with symptomatic chronic HFrEF after a worsening event hospitalization or IV diuretic. Deaths from cardiovascular causes occurred in 11 patients in the vericiguat group and in 7 patients in the placebo group.

Conclusion: Among patients with high-risk heart failure, the incidence of death from cardiovascular causes or hospitalization for heart failure was lower 10% among those who received Vericiguat than among those who received placebo.

Session Title: Friday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: EFFECT OF FINERENONE ON COLLAGEN TYPE I TURNOVER IN PATIENTS WITH ANTERIOR ST-SEGMENT ELEVATION ACUTE MYOCARDIAL INFARCTION UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION

Author Block: Rizqon Rohmatussadeli, Sekar Arum Nuring Kurnia, Chaerunnisa Hidayah, David Jonathan Pesireron, Wangi Niko Yuandika, Yan Herry, Aruman Yudianto Aribowo Binarso Mochtar, Pipin Ardhiyanto, Diponegoro University, Kota Semarang, Indonesia, Rumah Sakit Dr. Kariadi, Kota Semarang, Indonesia

Abstract Body: **Background:** Anterior STEMI carries a higher risk of cardiac remodeling due to the larger infarct area, increased collagen deposition, and greater left ventricular necrosis despite primary percutaneous coronary intervention (PPCI). Collagen changes can be assessed using *Carboxy-terminal propeptide of procollagen type I* (PICP) and *C-terminal telopeptide of collagen type I* (ICTP) biomarkers. Finerenone, a potent non-steroidal MRA, has the potential to prevent remodelling with fewer side effects than steroidal MRAs, but has not been studied in STEMI patients undergoing PCI. The aim of this study is to analyze the effect of Finerenone administration on type I collagen turnover in anterior STEMI patients who have undergone PPCI.

Methods: We conducted a prospective, randomized, double-blind trial in 39 patients with anterior STEMI onset 0-48 hours and *left ventricular ejection fraction* (LVEF) >40% who successfully treated with PPCI. Participants received either finerenone 10 mg daily (n=20) or standard therapy without spironolactone (n=19) for 30 days. Serum PICP and ICTP levels were measured using *enzyme-linked immunosorbent assay* (ELISA).

Results: A total of 39 subjects participants with mean LVEF $48.28 \pm 4.47\%$ have comparable baseline clinical characteristics between groups, except for a higher mean age in the treatment group (58.70 vs. 51.31 years). Finerenone significantly reduced serum PICP levels (-5.48 vs. -1.7 ng/mL; p = 0.013). It also significantly inhibited the increase in ICTP levels, as indicated by a lower mean change (Δ ICTP) in the Finerenone group compared to the control group (1.82 vs. 24.19 pg/mL; p = 0.003). No significant adverse effects related to Finerenone administration were observed.

Conclusion: Finerenone can inhibit collagen type I turnover in patients with anterior STEMI and mildly reduced LVEF treated by PPCI.

Session Title: Friday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: PERFORMANCE OF RADIOMICS ANALYSIS FOR PREDICTING MYOCARDIAL SCAR EXTENSION IN ISCHEMIC CARDIOMYOPATHY USING CINE CARDIAC MAGNETIC RESONANCE IMAGING

Author Block: Maethas Panyawongkhanti, Jaravee Lasode, Nonthikorn Theerasuwipakorn, Pairoj Chattranukulchai, Yongkasem Vorasettakarnkij, Yothin Rakvongthai, Monravee Tumkosit, King Chulalongkorn Memorial hospital, Bangkok, Thailand, Princess Srisavangavadhana College of Medicine, Bangkok, Thailand

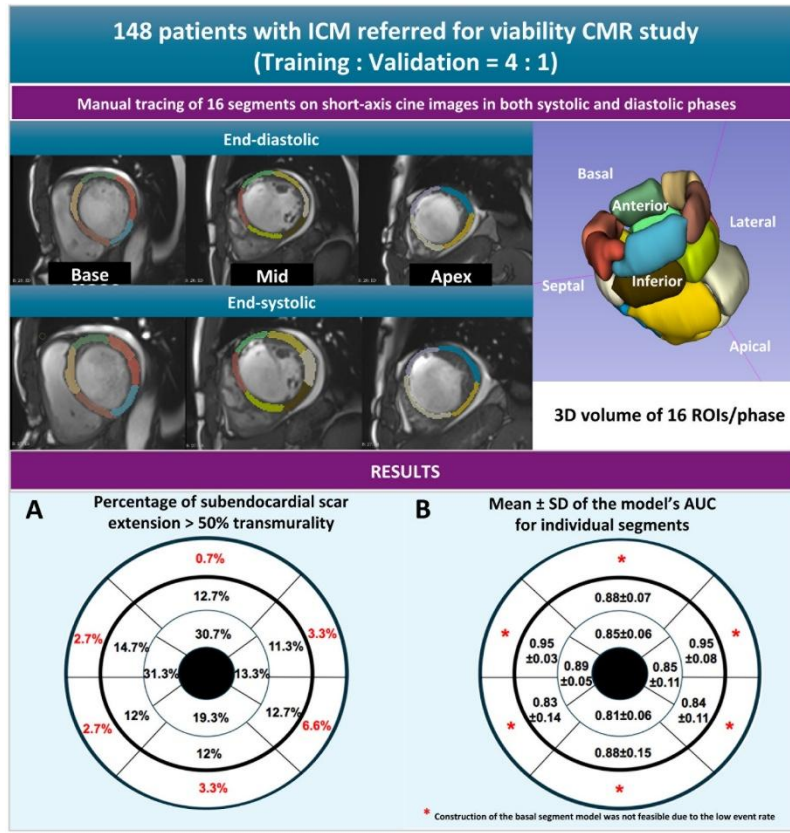
Abstract Body: **Background:** Late gadolinium enhancement (LGE) CMR assesses myocardium viability, but gadolinium poses contraindications or risks for many. This study used radiomics and gadolinium-free cine CMR to check if subendocardial scarring exceeds 50% transmural in ischemic cardiomyopathy.

Methods: We retrospectively analyzed 148 patients aged 18 or older with ischemic cardiomyopathy referred for CMR viability assessment. All underwent short-axis pre-contrast cine CMR of the left ventricle. Radiomic features were extracted from 16 myocardial segments during end-systolic and end-diastolic phases in pre-contrast images. Feature selection used intraclass correlation coefficient and recursive feature elimination with cross-validation (RFECV). Multivariate logistic regression developed segment models, evaluated by the area under the receiver operating characteristic curve (AUC).

Results: A total of 148 patients (mean age 63 ± 9.9 years; 108 men) were evaluated. Due to few events (scar transmural $>50\%$) in basal segments (1-6), models couldn't be built for these. For the remaining 10 segments (7-16), models showed good diagnostic performance, with AUC values from 0.81 ± 0.06 to 0.95 ± 0.03 .

Conclusion: Cine CMR-based radiomics effectively predicts over 50% transmural subendocardial scar in ischemic cardiomyopathy. It provides an alternative for assessing myocardial viability in patients contraindicated for

gadolinium, requiring multicenter validation.



Session Title: Friday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: THE SILENT EMBOLUS: CULTURE-NEGATIVE INFECTIVE ENDOCARDITIS MASQUERADING AS A FOREARM MASS

Author Block: Jonathan Quek, Xiayan Shen, Yun Yun Go, CHIW YEH LIM, Mohammed Rizwan Amanullah, Jie Jun Wong, National Heart Centre Singapore, Singapore, Singapore

Abstract Body:

Background: Diagnosing infective endocarditis (IE) can be challenging when typical features like fever are absent. Mycotic aneurysms are known complications, but rarely occur in the brachial artery.

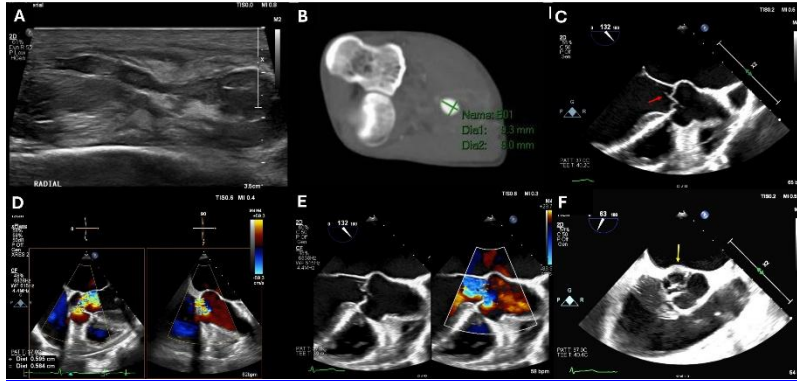
Case: A 72-year-old male without cardiac history or intravenous drug use presented with right forearm swelling for two weeks. He was afebrile and had no classical signs of IE. Ultrasonography (US) and angiography showed a brachial artery pseudoaneurysm at the radial-ulnar bifurcation. Computed Tomography (CT) scan revealed bilateral renal infarcts. The aneurysm was surgically excised. However, both blood and intraoperative cultures were negative. A transthoracic echocardiogram was inconclusive, showing a retracted right coronary cusp but no vegetations.

Decision-making: The presence of peripheral mycotic aneurysm and bilateral renal infarct was highly suspicious for embolic events. Later, a transesophageal echocardiogram (TEE) showed a mobile 6mm filamentous mass on the non-coronary cusp. Culture-negative IE was diagnosed based on the Modified Duke's Criteria.

Conclusion: Peripheral mycotic aneurysms can be the sentinel event of IE even without fever or bacteremia. This case illustrates the role of multimodal imaging in diagnosing culture-negative IE with an unusual presentation. The integration of peripheral vascular assessment (US, angiography, CT) and advanced cardiac imaging (TEE) was key to link a peripheral finding to its source

- allowing diagnosis even without typical features.

Figure 1: Multimodality imaging of a brachial artery pseudoaneurysm and infective endocarditis. (A) Grayscale ultrasonography of the forearm reveals a fusiform, hypoechoic dilation consistent with a brachial artery pseudoaneurysm. (B) Computed Tomography Angiography (CT-A) identifies a mycotic pseudoaneurysm at the brachial bifurcation, accompanied by partial thrombosis extending distally into the proximal radial and ulnar arteries. (C-F) Transesophageal echocardiography (TEE) demonstrates: (C) a 6 mm vegetation (red arrow) adhering to the ventricular aspect of the non-coronary cusp of the aortic valve; (D) a wide vena contracta (5.8 mm); (E) a prominent Doppler jet and proximal isovelocity surface area (PISA) consistent with severe aortic regurgitation; and (F) thickening of the intervalvular fibrosa (aortic-mitral curtain; yellow arrow).



Session Title: Friday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: CONTRAST CARDIAC MAGNETIC RESONANCE IMAGING ASSESSMENT OF MYOCARDIAL INJURY IN PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION AND DIABETES

Author Block: Julia Shalaginova, Olga Stukalova, Roman Shakhnovich, Dmitry Pevzner, Sergey Ternovoy, Chazov National Cardiology Research Center, Moscow, Russian Federation

Background: The presence of diabetes mellitus (DM) in patients with acute myocardial infarction (AMI) markedly worsens both short- and long-term outcomes; however, the specific features of infarct morphology and myocardial response in this population remain insufficiently characterized.

Methods: The study included 91 patients with revascularized STEMI (41 with DM and 50 without DM). All patients underwent contrast-enhanced cardiac magnetic resonance imaging, including T1 mapping. Myocardial tissue characterization of the left ventricle was performed to assess infarct size, heterogeneous zone, edema zone, native and post-contrast T1 values, and extracellular volume fraction (ECV) in both non-infarcted and infarcted myocardium.

Abstract Body: **Results:** The presence of DM in STEMI patients was associated with a significantly larger left ventricular end-diastolic volume (153 ± 38 vs 181 ± 58 mL, $p = 0.007$) and end-systolic volume (76 mL [54-93] vs 87 mL [71-122], $p = 0.035$). Infarct size was greater in patients with DM compared to those without DM (37 ± 15 g, 95% CI 33-41 vs 47 ± 21 g, 95% CI 40-53; $p = 0.017$). ECV was significantly higher in both remote myocardium (24% [22-27] vs 28% [24-30], $p = 0.002$) and infarcted tissue (48% [40-58] vs 58% [50-61], $p = 0.016$) among diabetic patients.

Conclusion: Patients with STEMI and concomitant DM exhibit larger infarct size, greater myocardial edema extent, and increased extracellular volume fraction in both infarcted and preserved myocardium compared to non-diabetic patients. These findings suggest enhanced diffuse and focal myocardial injury in DM, potentially contributing to adverse remodeling, myocardial dysfunction, and subsequent progression of heart failure.

Session Friday Poster Session
Title:

Topic 1: Multimodal Imaging

Publishing TIMING DIFFERENCE BETWEEN MITRAL AND TRICUSPID VALVES OPENING TO
Title: PREDICT OUTCOMES IN PATIENTS WITH STEMI

Author Parames ngeabngamsri, Danon Kaewkes, Khon Kaen University, Khon Kaen,
Block: Thailand

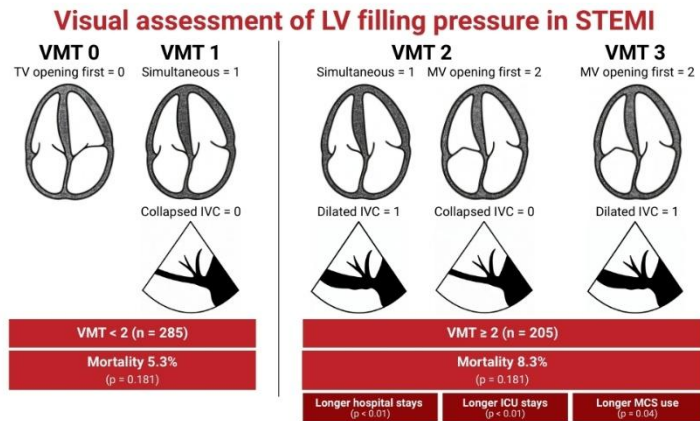
Background: The visually assessed time difference between the mitral valve and tricuspid valve opening (VMT) score has been associated with adverse clinical outcomes in heart failure, as a VMT score of 2 or greater, where the mitral valve opens earlier, indicates elevated left ventricular filling pressure. The clinical utility of this echocardiographic finding is unknown in patients presenting with ST-elevation myocardial infarction (STEMI), regardless of heart failure status.

Methods: We retrospectively investigated 490 STEMI patients, reviewing initial bedside echocardiography and assigning VMT scores ranging from 0 to 3. The primary outcome was in-hospital mortality.

Abstract
Body: **Results:** Among these patients, the in-hospital mortality rate was 6.5%. Of the 205 patients (41.8%) with a VMT score of 2 or greater, the mortality rate was 8.3%, compared to a mortality rate of 5.3% in the 285 patients (58.2%) with a VMT score of less than 2 ($p = 0.181$). However, in secondary analyses, we found that patients with a VMT score of 2 or greater had longer hospital stays (median 5.6 days, IQR 3.7-8.3 vs. 3.9 days, IQR 3.1-6.1, $p < 0.01$), longer ICU stays (median 4.0 days, IQR 2.6-6.2 vs. 2.9 days, IQR 2.0-4.7, $p < 0.01$), and increased use of mechanical circulatory support (16.1% vs. 7.7%, $p = 0.04$).

Conclusion: We conclude that while the VMT score does not predict in-hospital mortality in STEMI patients, those with a VMT score of 2 or greater had longer hospital stays, longer ICU stays, and increased use of mechanical

circulatory support.



Session Title: Friday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: APOB-CONTAINING LIPOPROTEIN PARTICLE PROFILES AND RISK OF DEGENERATIVE AORTIC STENOSIS

Author Block: Jianrui Ma, Xiangbin Pan, Fuwai Hospital, Beijing, People's Republic of China

Abstract Body:

Background: Apolipoprotein B-containing lipoprotein particle (apoB-P) is identified as an essential marker for lipid-mediated aortic stenosis (AS) risk. The effect of apoB-P profiles, including count, type, and size, on AS risk remains to be investigated yet.

Methods: A total of 273,888 participants with available nuclear magnetic resonance (NMR) information from the UK Biobank were included in this study. Multivariate Cox regression models and further Fine and Gray competing risk regression models were adopted to evaluate the association of the following apoB-P traits with incident AS: a) conventional apoB-P count and non-lipoprotein(a) (Lp(a)) apoB-P count; b) NMR non-Lp(a) apoB-P count; c) count of NMR lipoprotein class, including very-low-density lipoprotein (VLDL) and low-density lipoprotein (LDL); d) Ten NMR size subclasses; e) Average diameter of NMR VLDL and LDL; f) Lp(a). The predictive performance of the 10-year risk of AS, incorporating various apoB-P traits, was also evaluated.

Results: Each standard deviation (SD) increase in conventional apoB-P (HR, 1.19; 95% CI, 1.14-1.24) and NMR non-apoB-P (HR, 1.14; 95% CI, 1.09-1.19) was associated with 19% and 14% higher risk of AS, respectively. Per-particle VLDL (HR, 1.23; 95% CI, 1.04-1.46) was more pathogenic than LDL (HR, 1.01; 95% CI, 0.99-1.04), which was weakened by the small proportion of total apoB-P. The corresponding HR per SD were 1.10 (95% CI, 1.02-1.18) and 1.04 (95% CI, 0.97-1.13), respectively. The association of size subclasses and particle average diameter incident AS was less apparent. Elevated Lp(a) was robustly associated with increased AS risk with or without apoB-P adjustment (HR per SD, 1.19; 95% CI, 1.14-1.24). The addition of Lp(a) significantly improved the predictive performance of 10-year AS risk (C-index, 0.7954 vs 0.7911, $p < 0.001$).

Conclusion: The lipid-mediated risk of AS was most accurately captured by

the total apoB-P count rather than by major particle type or size. Elevated Lp(a) level posed a significant residual risk for AS. The prediction of incident AS could be best achieved by including both apoB-P and Lp(a).

Session Title: Friday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: THE HIDDEN CULPRIT: LATE DIAGNOSED COARCTATION OF THE AORTA MASQUERADING AS RESISTANT HYPERTENSION AND HEART FAILURE IN AN ADULT

Author Block: Thanawat Suksomboon, Suphoj Srimahachota, Chaisiri Wanlapakorn, King Chulalongkorn Memorial Hospital, Bangkok, Thailand

Abstract Body:

Background: Coarctation of the aorta (CoA) is typically diagnosed in childhood. New diagnosis in the seventh decade is extremely rare. In older adults, it often masquerades as resistant hypertension or ischemic cardiomyopathy. We present a case of missed CoA in a 64-year-old managing decompensated heart failure.

Case: A 64-year-old male with a 30-year history of resistant HT, DMT2, and CKD presented with acute dyspnea. Initial blood pressure was 193/93 mmHg. Physical examination revealed a grade III/VI systolic murmur at the left upper sternal border radiating to the back. Crucially, palpation revealed radio-femoral delay. A significant BP differential was confirmed: 161/84 mmHg in arms versus 113/71 mmHg in legs. CXR showed rib notching and the 3 sign. Echocardiogram revealed LVEF 37%, concentric LVH, and a bicuspid aortic valve. Angiography confirmed severe post-ductal CoA and concomitant coronary artery disease (two-vessel disease). Invasive hemodynamics demonstrated a critical peak-to-peak gradient of 70 mmHg.

Decision-making: The dilemma lay in managing ADHF driven by severe mechanical afterload versus ischemic substrate. Although coronary disease was present, the CoA was identified as the primary driver of LV failure. Due to high surgical risk, percutaneous stenting was performed using a covered stent. The gradient resolved immediately (70 mmHg to <10 mmHg). The patient's symptoms improved rapidly, allowing for medical optimization without immediate coronary intervention.

Conclusion: This case illustrates that common diseases like heart failure and hypertension can mask rare congenital defects, even in the elderly. It reinforces the necessity of checking femoral pulses in all hypertensive

patients. Late correction of CoA, even in the presence of CAD, is feasible and effective in reversing heart failure.

Session Title: Friday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: PRIMARY COMPLETE REPAIR VERSUS STAGED PALLIATION REPAIR FOR TETRALOGY OF FALLOT: A SYSTEMATIC REVIEW AND STRATIFIED META-ANALYSIS WITH META-REGRESSION OF CLINICAL STUDIES

Author Block: Derren Rampengan, Stevanus Surya, Michael Hogipranata, Muhammad Reva, Ammar Nojaid, Sebastian Emmanuel Willyanto, Imke Puling, Roy Ramadhan, Radityo Prakoso, Faculty of Medicine, Universitas Sam Ratulangi, Manado, Indonesia

Background: Tetralogy of Fallot (TOF) has wide anatomic and physiologic heterogeneity. Centers vary between primary complete repair in early life and staged palliation followed by later definitive repair, particularly for higher-risk phenotypes. We compared perioperative efficiency and early outcomes between strategies.

Methods: We performed a PRISMA-guided systematic review and meta-analysis of comparative cohort studies (six databases) registered in PROSPERO (CRD420251109305). Risk of bias was assessed with ROBINS-I (v2). Pooled effects used mean difference (MD) for continuous and odds ratio (OR) for dichotomous outcomes (95% CI), analyzed in RevMan 5.4; meta-regression explored was done with Meta-MAR v4.0.2.

Abstract Body: **Results:** Twenty-two non-randomized studies were included. Compared with staged repair, complete repair showed shorter cardiopulmonary bypass time (MD -27.18 min, 95% CI -38.12 to -16.24; $p < 0.00001$) and lower homograft/conduit use (OR 0.63, 95% CI 0.41-0.96; $p = 0.03$), but higher postoperative ECMO use (OR 1.57, 95% CI 1.08-2.28; $p = 0.02$) and permanent pacemaker implantation (OR 5.25, 95% CI 2.20-12.50; $p = 0.0002$). Other pooled outcomes were not significant, including cross-clamp time (MD -0.08 min), ventilation duration (MD 1.00 days), ICU LOS (MD 1.70 days), hospital LOS (MD 1.56 days), and reoperation ≥ 1 year (OR 0.87), with borderline higher ≥ 1 -year mortality after complete repair (OR 1.43, 95% CI 0.99-2.05; $p = 0.05$). Meta-regression indicated heterogeneity related to patient/era/procedural factors; for CPB time, significant moderators included publication year ≥ 2020 ($\beta -41.94$; $p = 0.0139$), age at repair ≥ 1 year ($\beta +106.15$; $p < 0.0001$), and absence

of mBTT shunt (β -44.09; $p=0.0128$), with the multivariable CPB model explaining most heterogeneity (R^2 98.58%; $QM(4)=110.91$, $p<0.0001$; $QE(6)=14.15$, $p=0.028$).

Conclusion: Primary complete repair confers operative efficiency and reduced conduit dependence but is associated with higher ECMO and pacemaker implantation; staged repair may be preferable for selected higher-risk anatomy. These findings support individualized, risk-adapted strategy selection rather than a uniform approach.

Session Title: Friday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: CLINICAL UTILITY OF 3D AUTO CFQ FOR QUANTIFYING MITRAL REGURGITATION

Author Block: Terada Mai, Yuki Izumi, Satonori Maekawara, Sakakibara Heart Institute, Tokyo, Japan

Abstract Body:

Background: Background:Accurate quantification of mitral regurgitation (MR) remains essential for determining appropriate timing of surgery and predicting postoperative outcomes. Traditional 2D PISA methods are widely used but are limited by geometric assumptions and fixed-orifice modeling. Novel AI-based techniques such as 3D Auto Cardiac Flow Quantification (Auto CFQ) using 3D transesophageal echocardiography (TEE) have been developed to provide dynamic, time-resolved assessment of regurgitant flow. This study evaluated the clinical validity of 3D Auto CFQ by comparing regurgitant volume (RV) with a modified reference standard: the change in left ventricular stroke volume before and after mitral valve surgery.

Methods: Methods:Thirty consecutive patients undergoing mitral valve surgery were retrospectively analyzed; three were excluded due to inadequate image quality, yielding 27 subjects. RV was quantified using 3D Auto CFQ and the conventional 2D PISA method. The reference standard was defined as the difference in LV stroke volume between preoperative and postoperative transthoracic echocardiography. Pearson correlation analysis and Bland-Altman plots were used to assess correlation and agreement.

Results: Results:3D Auto CFQ demonstrated a significant correlation with the reference stroke-volume difference ($r = 0.38$, $p = 0.049$), whereas 2D PISA showed no significant correlation ($r = 0.20$, $p = 0.31$). Bland-Altman analysis revealed smaller bias and narrower limits of agreement for 3D Auto CFQ compared with 2D PISA. The PISA method consistently underestimated RV, indicating systematic underestimation relative to the reference standard.

Conclusion: Conclusion:3D Auto CFQ provides more accurate and reliable MR quantification than conventional 2D PISA, likely due to its AI-based, time-resolved volumetric flow analysis. These findings support its clinical

applicability in preoperative MR assessment, with potential to improve decision-making for surgical intervention.

ACC Asia 2026 Together With KSC Spring Conference Abstracts and Cases

Saturday, 18 April 2026

Session Title: Complex Cases in Multimodal Imaging, Valvular Diseases and Structural Interventions

Topic 1: Multimodal Imaging

Publishing Title: MULTIMODALITY IMAGING OF CARDIAC LYMPHOMA: RIGHT CORONARY ARTERY ENCASEMENT AND ATYPICAL NECROTIC CYSTIC RESPONSE CHALLENGING POST-TREATMENT DECISION-MAKING

Author Block: Pakatorn Supasittikulchai, Maethas Panyawongkhanti, Chonthicha Tanking, Chulabhorn, Bangkok, Thailand

Background: Multimodality imaging is key in cardiac lymphoma, with echocardiography for initial screening and MRI for superior tissue and anatomical detail.

Case: A 69-year-old man with CLL developed new non-specific dyspnea despite stable labs and a normal chest radiograph, leading to cardiology evaluation.

Echocardiography showed a heterogeneous mass in the right atrioventricular groove encasing the RCA.

Cardiac MRI showed a 35 × 45 mm AV groove mass encasing the RCA without luminal invasion, infiltrating the lateral and inferior RV wall, isointense on T1, mildly hyperintense on T2/STIR, with early uptake and peripheral late enhancement surrounding a non-enhancing center—findings suggestive of cardiac lymphoma.

Abstract Body:

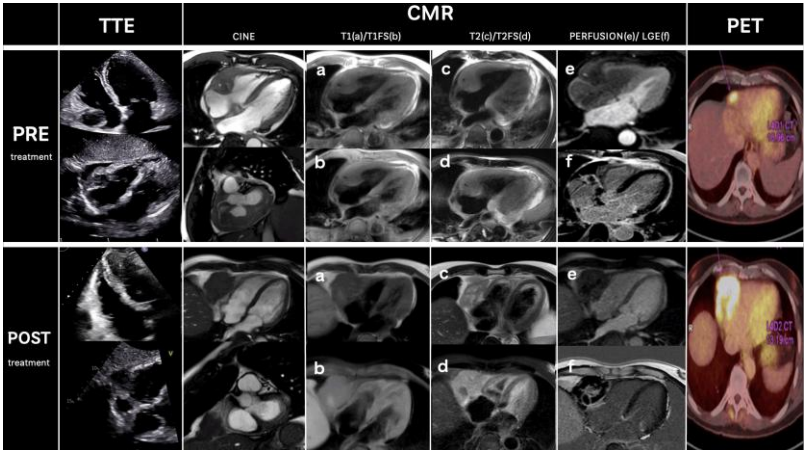
After chemotherapy, FDG-PET demonstrated a metabolically active right anterior diaphragmatic mass with central necrosis, and follow-up MRI identified a new 49 × 56 × 46 mm anterior pericardial mass containing a 25 × 13 mm round non-enhancing region consistent with hemorrhagic or necrotic cystic content, Atypical appearance mimicking disease progression.

Biopsy confirmed CD20-positive DLBCL, and with treatment adjustment, both the pericardial mass and RCA encasement regressed on subsequent MRI.

Decision-making: This rare necrotic cystic MRI pattern complicates post-treatment assessment, emphasizing the need for biopsy when imaging is equivocal.

Conclusion: This case highlights classic cardiac lymphoma MRI features and a

rare post-treatment necrotic cystic change.



Session Title: Complex Cases in Multimodal Imaging, Valvular Diseases and Structural Interventions

Topic 1: Multimodal Imaging

Publishing Title: RECURRENT PERICARDIAL EFFUSION AS PRESENTING FEATURE OF BRAF-MUTANT ERDHEIM-CHESTER DISEASE

Author Block: Scott Wong, Uzma Afzal, Linxuan Yan, Tan Jiao Jie, Cherie, May Anne Cheong, Zhentang Lao, Sathiyamoorthy Selvarajan, Phong Teck Lee, Choon Ta Ng, Anders Olof Sahlen, Teo Loon Yee, Louis, National Heart Center, Singapore, Singapore, Department of Hematology, Singapore General Hospital

Abstract Body: **Background:** Erdheim-Chester disease (ECD) is a rare multisystem histiocytic neoplasm with cardiac involvement in 50-70%, with pericardial effusion in less than 10% of first presentations.

Case: A 48-year-old Indian lady presented with four weeks of exertional breathlessness. Echocardiogram showed a large pericardial effusion, with pericardiocentesis draining 600ml of exudative fluid. Differentials include infective, myeloproliferative, and autoimmune diseases e.g. Tuberculosis, lymphoma, IGG4. Standard investigations and BMA were unyielding. Cardiac MRI revealed right, posterior, and left interventricular groove masses encasing the proximal RCA and LCX. The effusion recurred despite a trial of steroids, prompting pericardial window creation and biopsy which was unremarkable. PET-CT revealed pericardial enhancement, retroperitoneal infiltrates, and bilateral lower limb hypermetabolic activity. Tibial biopsy showed foamy histiocytes positive for CD68/CD163, with BRAF V600E mutation confirming ECD.

Decision-making: Recurrent, steroid-resistant pericardial effusion may indicate rare systemic disorders. In the absence of autoimmune, infective, and oncological markers, multi-modality imaging such as PET-CT can reveal the extent of systemic involvement and any extra-cardiac biopsy sites for histological and molecular diagnosis.

Conclusion: High clinical suspicion, multidisciplinary approach, and

multimodality imaging are fundamental for ECD diagnosis and treatment.

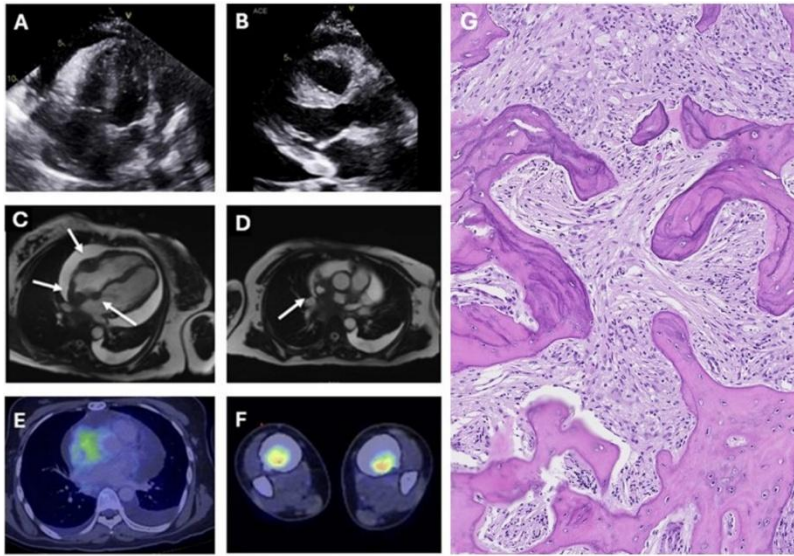


Figure 1 A-B) Echocardiogram with large pericardial effusion (>21mm lateral wall, 18mm posteriorly), **C-D)** cMRI with extensive mass encircling SVC entry into RA at right, posterior and left interventricular grooves, encasing RCA and LCX, infiltrating into RA superior, lateral and posterior walls and interatrial septum, and pericardium of both ventricles **E-F)** PET-CT scan showing hypermetabolic activity in ill-defined intra-pericardial soft tissue with encasement of vessels (SUV max 7.5), and bilateral distal tibia (SUV max 10.3) **G)** Tibial biopsy showing cortical bone with sclerotic reactive new bone formation and intervened by spindle to xanthomatous cells admixed with minimal other inflammatory cells.

Abbreviations – BMA – Bone Marrow Aspirate; cMRI – Cardiac Magnetic Resonance Imaging; RCA – Right Coronary Artery; LCX – Left Circumflex Artery; RA - Right Atrium; PET-CT – Positron Emission Tomography – Computed Tomography; SUV – Standardized Uptake Value

Session Title: Complex Cases in Multimodal Imaging, Valvular Diseases and Structural Interventions

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: AORTA TO LEFT ATRIUM- THE TUNNEL RARELY TRAVELLED: A CASE OF PERCUTANEOUS CLOSURE IN A CHILD

Author Block: Pranabananda Pal, Shatanik Sarkar, lopamudra mishra, sankar chandra mandal, IPGMER AND SSKM KOLKATA, KOLKATA, YT, India

Abstract Body:

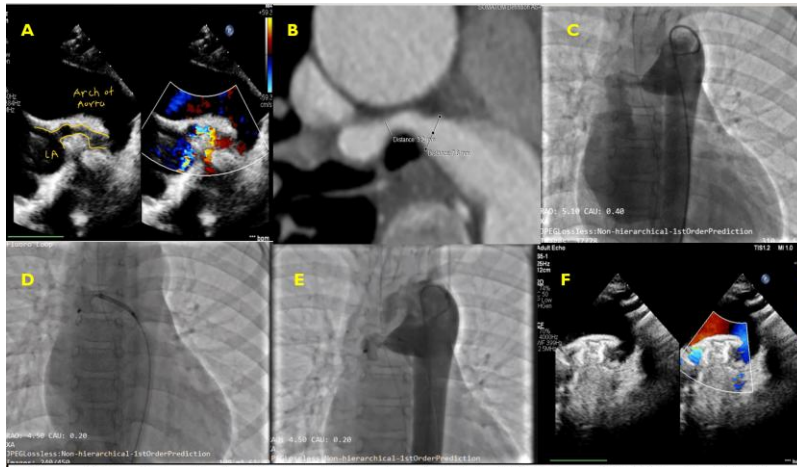
Background: Congenital aorto-atrial tunnels are exceedingly rare extracardiac vascular structures and communication between the **descending thoracic aorta (DTA)** and the **left atrium (LA)** is exceptionally uncommon, with only a few cases reported worldwide.

Case: A 9-year-old boy presented with a **continuous murmur** best heard posteriorly to the right of the spine. He was acyanotic, with normal growth and no heart-failure signs. Echocardiography revealed **dilated LA and LV**, intact septa, and a **tunnel-like channel arising from the DTA and draining into the LA**, producing continuous high-velocity flow. CT angiography confirmed an **aorto-LA tunnel**.

Decision-making: Cardiac catheterization delineated the communication, which was successfully closed percutaneously using a **12 × 10 Lifetech multifenestrated occluder (MFO)** device. Post-deployment angiography showed complete abolition of shunt flow. The postoperative course was uneventful. Follow-up echocardiography demonstrated a well-seated device, **good LV systolic function**, and **reduced LA volume**. The patient was discharged on **Aspirin for 6 months** and remains asymptomatic on follow-up.

Conclusion: Most aorto-atrial fistulas are acquired, while congenital variants—especially **DTA-LA tunnels—are embryologically improbable and extremely rare**. Early diagnosis through multimodality imaging and **transcatheter closure** offers excellent outcomes, preventing progressive chamber dilation

and heart failure.



A: Delineation of the tunnel in echocardiography. B: CT aortogram: tubular tunnel connecting the Aorta and LA. C: Aortogram with SF pigtail: tunnel from DTA to LA. D: MFO device in position before deployment. E: Aortogram shows no residual defect before release. F: Device in position seen in post-procedure echocardiography.

Session Title: Heart Failure and Cardiomyopathies Oral Abstracts

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: SAFETY AND EFFICACY OF EARLY INITIATION OF SGLT2I AMONG ACUTE HEART FAILURE PATIENTS: A META-ANALYSIS

Author Block: MARK JOSEPH CUNTAPAY, Noemi Pestano, Manila Doctors Hospital, Manila, Philippines

Abstract Body:

Background: Acute heart failure (AHF) is a leading cause of hospital admissions, particularly among individuals over the age of 65. In both developed and developing countries, AHF poses a significant healthcare burden, accounting for high morbidity and mortality rates among affected patients. Conventional treatments, including intravenous loop diuretics and vasodilators, aim to alleviate congestion and stabilize the patient. Sodium-glucose co-transporter 2 inhibitors (SGLT2i) have emerged as a novel class of drugs that not only improve glycemic control in patients with type 2 diabetes but also provide cardiovascular and renal benefits. However, the role of SGLT2 inhibitors in acute heart failure is less established.

Methods: We conducted a systematic review and meta-analysis of randomized controlled trials (RCTs) initiating SGLT2i during index hospitalization for AHF. Six RCTs (n=1,603) comparing empagliflozin or dapagliflozin to placebo were included. Outcomes analyzed were major adverse cardiovascular events (MACE), all-cause death, heart failure rehospitalization, and worsening renal function (WRF). Pooled odds ratios (OR) with 95% confidence intervals (CI) were calculated using random-effects models.

Results: Early initiation of SGLT2i significantly reduced MACE versus placebo (OR 0.75, 95% CI 0.59-0.96). Empagliflozin demonstrated a stronger reduction (OR 0.53, 95% CI 0.35-0.79), while dapagliflozin showed no significant effect (OR 0.92, 95% CI 0.68-1.26). SGLT2i lowered the risk of HF rehospitalization (OR 0.63, 95% CI 0.42-0.95), particularly with empagliflozin (OR 0.61, 95% CI 0.39-0.96). No significant difference was observed in all-cause mortality (OR 0.85, 95% CI 0.63-1.14). WRF risk was not increased overall (OR 0.78, 95% CI 0.56-1.08), with empagliflozin showing renal protection (OR 0.57, 95% CI 0.34-0.96).

Conclusion: Early initiation of SGLT2i in AHF, particularly empagliflozin, reduces MACE and HF rehospitalizations without increasing renal risk. These findings support SGLT2i as a safe and effective early adjunct in the inpatient management of AHF.

Session Title: Heart Failure and Cardiomyopathies Oral Abstracts

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: ROLE OF REMOTE DIELECTRIC SENSING IN OPTIMIZING HEART FAILURE CARE: AN INDIAN PILOT STUDY

Author Block: Gopala krishna Medarametla, Surender Deora, Atul Kaushik, Rahul Choudhary, Narendra Bordiya, Ankit kumar Yadav, Kuldeep Gaur, AIIMS JODHPUR, JODHPUR, India

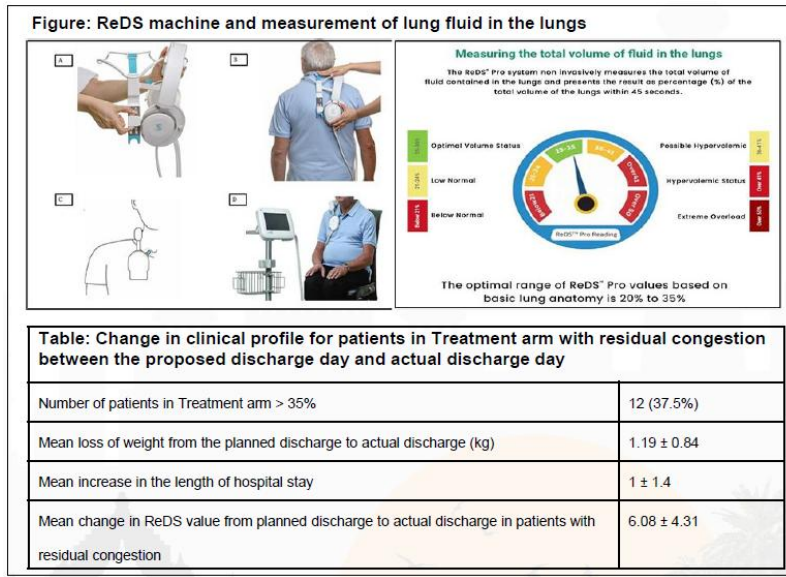
Abstract Body: **Background:** Residual pulmonary congestion at discharge predicts early heart failure (HF) rehospitalisation, but clinical assessment may miss subclinical fluid overload. Remote Dielectric Sensing (ReDS™) quantifies lung fluid, with limited data available in India. This study assessed the prevalence of residual congestion using ReDS and its impact on 45-day HF readmissions.

Methods: In this single-centre, prospective, randomized, blinded Phase IV trial, HF patients with pulmonary congestion were assigned to ReDS-guided discharge or standard care. In the intervention arm, ReDS >35% prompted further decongestion until ReDS ≤35%. Sixty patients completed follow-up (Treatment arm: 32 and Control arm: 28).

Results: Residual congestion (ReDS >35%) was common (55%) and lower in the treatment vs. control arm (37.5% vs. 75%; p<0.001). Additional diuresis increased stay by 1 ± 1.4 days and reduced weight by 1.19 ± 0.84 kg with a 6.08 ± 4.31% reduction in ReDS. ReDS guidance reduced 45-day HF readmissions (6.2% vs. 28.6%; p=0.024). Readmissions were fewer when discharged with ReDS ≤35% (3.7% vs. 27%). Mortality occurred only in controls.

Conclusion: Over half of clinically stable HF patients had residual congestion. ReDS-guided management improved decongestion and significantly lowered

early HF readmissions. Larger multicentre studies are warranted.



Session Title: Heart Failure and Cardiomyopathies Oral Abstracts

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: AI-ENHANCED ECG SCREENING FOR LEFT VENTRICULAR SYSTOLIC DYSFUNCTION: CLINICAL OUTCOMES AND COST-EFFECTIVENESS, A RETROSPECTIVE MULTICENTER COHORT STUDY.

Author Block: Lok Kin Wesley Yeung, Joey Chua, Melody Wang, Silingga Metta Jauhari, Mark Chan, James Wei Luen Yip, National University Heart Centre Singapore, Singapore, Singapore, National University of Singapore, Singapore, Singapore

Abstract Body:

Background: CVD is the leading cause of death globally. A critical gap exists in the early detection of asymptomatic LV systolic dysfunction (aLVSD). Although early treatment reduces mortality, widespread echocardiographic screening is impractical due to cost and capacity constraints.

Methods: We performed a multiple center retrospective cohort study at a large public healthcare system in Singapore. We trained a lightweight, 8 million parameter, convolutional neural network adapted from EfficientNet-B0, trained on 253,586 ECGs with paired LVEF estimates. Internal and external validation was performed on a combined test dataset of 142,908 ECG-echocardiogram pairs across multiple NUHS institutions, demonstrating stable performance across different ECG systems. A retrospective cohort of 118,221 patients (263,145 ECGs) from 2022-2023 was used to estimate real-world impact. Clinical outcomes included heart failure hospitalization, all-cause mortality, and a composite of either event. Cost-effectiveness was estimated using a Monte Carlo simulation incorporating treatment uptake, trial-derived relative risk reductions (from SOLVD-Prevention and SAVE trials), and Singapore-specific cost distributions for HF hospitalization and premature death

Results: The model achieved high performance (AUROC 0.886, accuracy 85.4%). In the addressable population (n=105,109), deployment at a 0.5 threshold flagged 3.2% of patients (PPV 62%, sensitivity 63%). Simulation estimated prevention of 28.9 composite events (15.2 deaths, 13.6 HF hospitalizations) per 100,000 screened (NNS 3,644). Net system savings were SGD 21.1 million (95% CI 10.1-36.4M). Predictions were strongly associated with adverse outcomes (HR 2.28 for composite events, p<0.0001).

Conclusion: Our model effectively repurposes the routine 12-lead ECG into a scalable, non-invasive screening tool for aLVSD, enabling early initiation of evidence-based therapy. Our findings suggest that system-wide adoption could substantially reduce morbidity, mortality, and healthcare expenditure in Singapore, supporting the case for prospective validation and regulatory approval as part of the national prevention strategy.

Session Title: Heart Failure and Cardiomyopathies Oral Abstracts

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: DEEP ENSEMBLE AI-ECG FOR LVEF PREDICTION WITH UNCERTAINTY QUANTIFICATION: UNCERTAINTY-INFORMED AI-ECG AND ITS POTENTIAL FOR SERIAL ASSESSMENT OF VENTRICULAR FUNCTION

Author Block: JungHeui Kim, Sanggon Yoon, Iksung Cho, Seng Chan You, Yonsei University College of Medicine, Seoul, South Korea

Background: We developed a deep ensemble model that directly predicts left ventricular ejection fraction (LVEF) as numerical values from electrocardiogram (ECG) and quantifies prediction uncertainty, and evaluated its clinical utility.

Methods: We developed a deep ensemble model with uncertainty quantification using 288,128 ECG-echocardiogram pairs from 183,142 patients at Severance Hospital (2006-2023) and externally validated with 133,084 pairs from 92,890 patients at Gangnam Severance Hospital (2008-2023). To optimize prediction reliability, we set an uncertainty threshold of 9.0 to exclude the 5% of cases with the highest uncertainty. We evaluated the association between baseline ECG-derived ejection fraction (ECG-EF) and 90-day all-cause mortality using Cox proportional hazards models. Among 1,100 patients with heart failure with mid-range ejection fraction (HFmrEF). We used linear mixed-effects models to compare ECG-EF decline trajectories between HFmrEF patients who progressed to HFrfEF and non-progressors.

Abstract Body:

Results: The model achieved MAE of 5.3 (internal) and 4.8 (external), with significantly improved performance in low uncertainty cases (MAE 5.0 vs. 10.8). Baseline ECG-EF demonstrated a strong association with 90-day mortality risk, with patients having ECG-EF $\leq 40\%$ showing a 3.35-fold higher mortality risk compared to those with ECG-EF $\geq 50\%$ in the internal cohort (adjusted HR 3.35, 95% CI 2.60-4.31, $p < 0.001$), and consistent findings were observed in external validation. In longitudinal analysis of HFmrEF patients, those who progressed to HFrfEF exhibited significantly steeper ECG-EF decline trajectories compared to non-progressors ($p < 0.001$ for time \times group interaction).

Conclusion: ECG-EF, derived from an uncertainty-informed deep ensemble

AI-ECG model, provides reliable numerical LVEF estimates and demonstrates prognostic value beyond static diagnosis. In HFmrEF patients, ECG-EF not only predicts future deterioration but also captures dynamic trajectories preceding progression to HFrEF, suggesting its potential as a non-invasive biomarker for serial monitoring and risk-stratified management.

Session Title: Multimodal Imaging Oral Abstracts

Topic 1: Multimodal Imaging

Publishing Title: FEASIBILITY OF CONTRAST-ENHANCED CARDIAC CT FOR EXTRACELLULAR VOLUME QUANTIFICATION IN HYPERTROPHIC CARDIOMYOPATHY: A RETROSPECTIVE COMPARISON WITH CARDIAC MRI

Author Block: Siyuan Chen, Xinran Huang, Bin Lv, Department of Radiology, Fuwai Hospital, National Center for Cardiovascular Diseases, Chinese Acade, Beijing, People's Republic of China

Abstract Body: **Background:** This study aims to evaluate the consistency between cardiac computed tomography (CT) measured myocardial extracellular volume (ECV) and cardiac magnetic resonance (CMR) measured ECV in patients with hypertrophic cardiomyopathy (HCM), and to assess the diagnostic performance of CT-ECV in determining the severity of myocardial fibrosis.

Methods: This retrospective study included 32 genetically diagnosed HCM patients from Fuwai Hospital, enrolled between September 2024 and June 2025. All patients underwent cardiac CT and MRI within one month. Cardiac CT was performed using non-contrast, contrast-enhanced, and delayed-phase scans to calculate CT-ECV, while CMR-ECV was derived from CMR T1 mapping images. The apical, mid, and basal segments of CT and MRI images were aligned for comparison. Paired t-tests, Pearson correlation analysis, and Bland-Altman analysis were performed to assess the differences, correlations, and consistency between CT-ECV and CMR-ECV. The diagnostic performance of CT-ECV for high-risk HCM with myocardial fibrosis (defined by CMR late gadolinium enhancement [LGE] $\geq 15\%$) was evaluated using receiver operating characteristic curves.

Results: A total of 32 patients were included, with a mean age of 40.06 ± 14.41 years, and 21 (65.6%) were male. No significant difference was found between CT-ECV and MRI-ECV ($31.25\% \pm 5.07\%$ vs. $30.88\% \pm 4.35\%$, $P = 0.582$). Correlation analysis showed strong correlations between CT-ECV and MRI-ECV for the overall myocardium and each myocardial segment (overall, $r = 0.68$, $P < 0.001$; basal, $r = 0.51$, $P = 0.003$; mid, $r = 0.69$, $P < 0.001$; apical, $r = 0.69$, $P < 0.001$). Bland-Altman analysis between CT-ECV and CMR-ECV showed a mean difference of 0.37% (95% CI: 7.04% to 7.79%) for overall ECV.

The area under the curve for CT-ECV diagnosing LGE \geq 15% was 0.748, with a threshold of 35.5%.

Conclusion: CT-measured ECV shows strong potential for quantitatively assessing myocardial fibrosis in HCM patients, offering a valuable non-invasive alternative, especially for patients with contraindications to MRI or those requiring both coronary artery and myocardial evaluation.

Session Title: Multimodal Imaging Oral Abstracts

Topic 1: Multimodal Imaging

Publishing Title: AUTOMATED LIPID-TO-FIBROUS RATIO FROM OCT INDEPENDENTLY PREDICTS NON-CULPRIT VESSEL EVENTS

Author Block: Yuan Wang, Zheng Jiawei, Yanjing Feng, Yu Wang, Fuxian Ren, Dengfeng Gao, Department of Cardiology, The Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, People's Republic of China

Abstract Body:

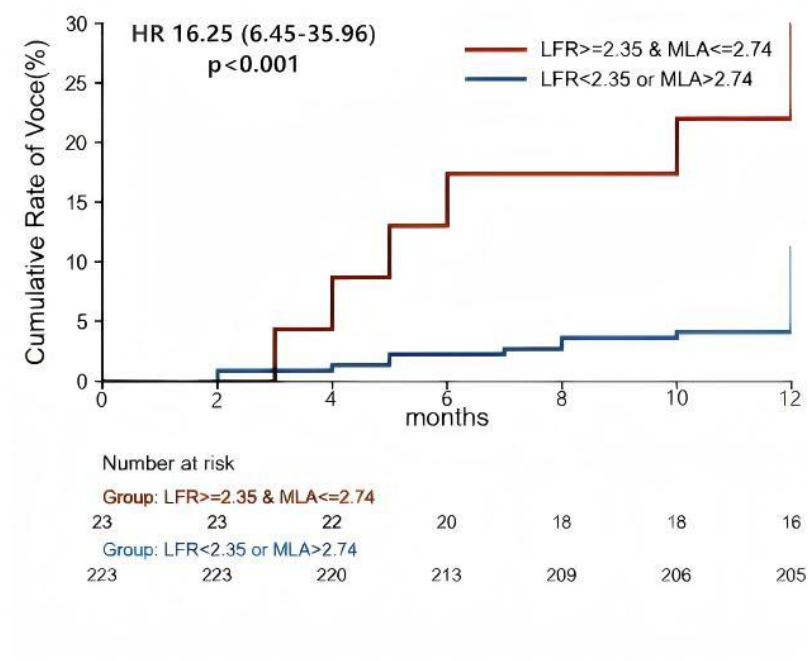
Background: Conventional morphological assessment often fails to detect high-risk non-culprit plaques. We hypothesized that the lipid-to-fibrous ratio (LFR), a novel artificial intelligence (AI)-derived OCT biomarker, provides superior 12-month risk stratification for non-culprit vessel-oriented composite events (NCV-VOCE).

Methods: In this prospective cohort study, OCT pullbacks from 263 non-culprit vessels (246 patients) were analyzed using a validated deep-learning model to quantify LFR. The primary endpoint was 12-month NCV-VOCE (cardiac death, myocardial infarction, or ischemia-driven revascularization). Prognostic performance was compared against minimal lumen area (MLA) and thin-cap fibroatheroma (TCFA).

Results: NCV-VOCE occurred in 10.2% of patients. LFR was markedly higher in the event group (4.36 ± 4.45) vs non-event group (1.26 ± 1.98 ; $P < 0.001$). LFR discrimination (AUC 0.76) significantly outperformed MLA (Δ AUC +0.19; $P < 0.001$) and TCFA (Δ AUC +0.17; $P < 0.001$). LFR was an independent predictor (adjusted HR 2.41; $P = 0.012$). Combining $LFR \geq 2.35$ with $MLA \leq 2.74 \text{ mm}^2$ identified a high-risk phenotype with a 16.25-fold increased hazard ($P < 0.001$).

Conclusion: The AI-derived LFR quantifies biological plaque instability independent of geometry. Integrating LFR with structural assessment significantly refines risk stratification for non-culprit lesions.

The synergistic prognostic value of combining high Lipid-to-Fibrous Ratio (LFR) with low Minimal Lumen Area (MLA)



Session Title: Multimodal Imaging Oral Abstracts

Topic 1: Multimodal Imaging

Publishing Title: RESIDUAL LEFT VENTRICULAR HYPERTROPHY AND REMODELING IN CHILDREN AFTER SUCCESSFUL TREATMENT OF COARCTATION OF THE AORTA

Author Block: Pham Thuc Minh Thuy, Phuc Nang Vu, Chi Nguyen, Thu-Tinh Nguyen, Phuc Minh Vu, University of Medicine and Pharmacy at HCMC, Hochiminh, Viet Nam, Tam Anh general hospital at Hochiminh city, Hochiminh, Viet Nam

Abstract Body:

Background: Left ventricular (LV) hypertrophy may persist in children after repaired coarctation of the aorta (CoA), but its determinants and relation to strain-based myocardial work (MW) remain unclear.

Methods: We studied 61 children after successful surgical or catheter-based repair of CoA. Conventional echocardiography yielded LV mass index (LVMI, $\text{g}/\text{m}^{2.7}$) and relative wall thickness; global longitudinal strain (GLS) and MW indices (global work index [GWI], constructive work [GCW], wasted work [GWW], work efficiency [GWE]) were obtained by speckle-tracking. LVMI and LV geometry were compared across age, body size, blood pressure, and time since repair, and their associations with GLS and MW were evaluated.

Results: Median age was 55 months (IQR 20-102), 72% were boys, and median time after the last CoA procedure was 23.5 months. Median LVMI was $42.2 \text{ g}/\text{m}^{2.7}$ (IQR 32.9-55.5); LV mass was normal in 34.4%, borderline in 11.5%, and hypertrophic in 54.1%. Children <2 years had higher LVMI than older patients (57.2 vs 36.8 $\text{g}/\text{m}^{2.7}$, $p=0.005$), and LVMI declined with greater height, weight, and time since repair. In multivariable models, LVMI remained independently related to LV dimensions and posterior wall thickness. All patients had preserved ejection fraction, and mean GLS was within pediatric normal limits. MW showed frequent inefficiency, but LVMI correlated only weakly with GLS and MW indices.

Conclusion: Over half of children after apparently successful CoA repair have persistent LV hypertrophy despite preserved EF and near-normal GLS. LVMI is highest in younger, smaller patients and tracks LV size and wall thickness more closely than deformation or MW. Systematic assessment of LV mass and geometry may help refine long-term risk stratification after CoA repair.

Session Title: Multimodal Imaging Oral Abstracts

Topic 1: Multimodal Imaging

Publishing Title: AI-ENHANCED CHEST RADIOGRAPHY FOR DIFFERENTIATING HEART FAILURE FROM PERICARDIAL EFFUSION: A DEEP LEARNING-BASED DIAGNOSTIC STUDY

Author Block: Min-Kyung Kang, JiWung Ryu, Dong Geum Shin, Seonghoon Choi, Jung Rae Cho, Namho Lee, Kangnam Sacred Heart Hospital, Seoul, South Korea

Abstract Body:

Background: Cardiomegaly on chest radiography (CXR) commonly reflects heart failure (HF) or pericardial effusion (PE), which require distinct management. Early differentiation is essential, but conventional CXR interpretation is limited. This study evaluated whether an AI-based deep learning model can distinguish HF from PE and examined associated clinical and echocardiographic features.

Methods: In this retrospective single-centre study, 619 patients with same-day CXR and echocardiography were analyzed (HF n=508; PE n=111). A fine-tuned Vision Transformer (ViT) model trained on 3,647 CXRs classified HF, PE, and normal findings. Cardiomegaly detection and model performance were compared with expert readers.

Results: Cardiomegaly was more frequent in PE than HF (78% vs 57%; $P < 0.001$). HF showed larger left-sided chambers, reduced systolic function, and elevated filling pressures, whereas PE demonstrated higher right atrial pressure. The AI model achieved excellent discrimination (accuracy 93%; AUC 0.99), outperforming readers, and reliably identified cardiomegaly across HF phenotypes, including HFpEF.

Conclusion: AI-enhanced CXR interpretation improves diagnostic accuracy and enables robust differentiation between HF and PE at initial imaging. Incorporating AI-based analysis may accelerate phenotype-specific decision-making and streamline acute care evaluation.

AI-Assisted cardiomegaly interpretation enhances Early Differentiation of Heart Failure and Pericardial Effusion

Case 1: Heart Failure



- Radiologist: Normal
- AI classifier: HF
- Echo: HFpEF (LAVI 44.9^{mL/m²})

Unnecessary
reassurance;
HF work-up
missed

AI-guided
pathway
X

Case 2: Pericardial Effusion



- Radiologist: No CM
- AI classifier: PE
- Echo: Large PE (22 mm)

Inappropriate diuretics

Case 3: Normal



- Radiologist: Mild CM
- AI classifier: Normal
- Echo: Normal

Unnecessary
HF evaluation
X

Avoided
unnecessary
testing
O

AI-assisted cardiomegaly interpretation improves diagnostic accuracy and guides appropriate early management in patients with cardiomegaly on chest radiography.

Session Title: Complex Cases in Valvular Disease, Structural Interventions, Coronary Interventions and Ischemic Heart Diseases

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: STENT INDUCED AORTIC REGURGITATION

Author Block: SHAFEEK AZHIKKALAYIL, government medical college calicut kerala, malappuram, India

Abstract Body:

Background: Severe Aortic Regurgitation (AR) after Percutaneous Coronary Intervention(PCI) is an extremely rare complication . Majority of documented cases in literature are due to acute onset AR secondary to catheter/guide wire induced laceration/perforation of leaflets . Here we report a rare case of chronic AR following left main coronary artery stenting.

Case: We report a case of 43 years old male with presented with anterior wall ST elevation myocardial infarction . During PCI patient had multiple episode of ischemic ventricular tachycardia and cardiac arrest. Post cardiopulmonary resuscitation , Left main coronary artery dissection was noted and managed with stenting . At the time of discharge patient was stable and no aortic regurgitation. 7 months later patient presented with new onset AR and echo showed stent protrusion from Left main artery . Stenting induced chronic severe AR secondary to the protruding stent , probably caused a repeated mechanical trauma to the aortic valve, making the left coronary cusp fibrotic and retracted- producing severe AR. Patient was managed with stent retrieval, Aortic valve replacement and bypass graft.

Decision-making: We searched for the possibilities of mechanism of AR which include Catheter or guide wire induced perforation or laceration of leaflet cusp which usually presents as acute AR. Fibrosis & retraction of leaflet cusp due to repeated trauma to the leaflet cusp by protruding stent which presented as Chronic AR. We propose the mechanism in our case as iatrogenic chronic severe AR, where the protruding LM stent probably caused a repeated mechanical trauma to the aortic valve, making the left coronary cusp fibrotic and retracted- producing severe AR. In our case patient underwent stent retrieval ,AVR and CABG

Conclusion: Severe AR is extremely rare after PCI. We report very rare case of iatrogenic stent induced chronic severe AR where the protruding LM stent

probably caused repeated mechanical trauma to left cusp leading to fibrosis and retraction. This conclude that chronic severe AR can appear as delayed complication after angioplasty. We should be cautious while dealing with ostial coronary lesions.

Session Title: Complex Cases in Valvular Disease, Structural Interventions, Coronary Interventions and Ischemic Heart Diseases

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: AORTOPULMONARY COLLATERAL ARTERY STENTING AS LIFE SAVING PALLIATION IN LATE PRESENTING PULMONARY ATRESIA WITH VENTRICULAR SEPTAL DEFECT

Author Block: Phuc Nang Vu, THUY THUC MINH PHAM, Thong MINH LUONG, THUY THI MINH HUYNH, VINH NGUYEN PHAM, Tam Anh general hospital of Ho Chi Minh city, Ho Chi Minh City, Viet Nam

Abstract Body:

Background: Pulmonary atresia with ventricular septal defect (PA-VSD) and major aortopulmonary collateral arteries (MAPCAs) is a rare cyanotic congenital heart defect. Patients presenting late with severe ventricular dysfunction have prohibitive surgical risk, and targeted catheter-based palliation may be life-saving.

Case: A 12-year-old boy presented with profound cyanosis and NYHA IV heart failure. SpO₂ was 65-70%. Echocardiography showed PA-VSD with markedly hypoplastic native pulmonary arteries and multiple MAPCAs. Biventricular systolic function was severely depressed (EF 20%, GLS -6.3%; RV free wall strain -16.1%). CT angiography identified an 11 mm MAPCA from the descending aorta with critical distal stenosis supplying the native pulmonary artery. After multidisciplinary evaluation, palliative MAPCA stenting was selected to improve pulmonary blood flow and stabilize hemodynamics.

Decision-making: A 7 x 18 mm peripheral stent was implanted at 12 atm, followed by post-dilatation with a 6 x 15 mm balloon to 20 atm. Angiography showed immediate augmentation of pulmonary perfusion. Cyanosis improved promptly, and the patient was discharged 48 hours later. MAPCA stenting in advanced PA-VSD can serve as a bridge strategy in patients unsuitable for surgical repair, offering reversible ventricular unloading and enhanced oxygen delivery. Careful imaging-guided selection of the target MAPCA and precise stent sizing are crucial for safety and benefit.

Conclusion: MAPCA stenting provided rapid hemodynamic stabilization and enabled complete recovery of biventricular systolic function at 3-month follow-up, illustrating its value as a life-saving option in late-presenting PA-VSD with severe ventricular dysfunction.

Session Title: **Complex Cases in Valvular Disease, Structural Interventions, Coronary Interventions and Ischemic Heart Diseases**

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: ELLIS TYPE III CORONARY PERFORATION OF THE LEFT ANTERIOR DESCENDING ARTERY DURING PERCUTANEOUS CORONARY INTERVENTION WITH SUCCESSFUL MANAGEMENT AFTER CARDIAC ARREST AND COVERED STENT-INDUCED OCCLUSION OF THE LEFT CIRCUMFLEX ARTERY OSTIUM

Author Block: Sherzod Mamatkarim o'g'li Ahmedov, Ezgu Niyat, Tashkent, YT, Uzbekistan, Carmen+, Buxara, KY, Uzbekistan

Background: Coronary perforation is an uncommon but life-threatening complication of percutaneous coronary intervention (PCI) that can rapidly cause tamponade and cardiac arrest, requiring immediate mechanical and hemodynamic interventions.

Case: A male with multivessel coronary disease underwent PCI for a heavily calcified proximal-mid left anterior descending artery (LAD) lesion. Right-radial access was used and two guidewires were positioned in the LAD and obtuse marginal branch. After predilatation, two overlapping drug-eluting stents were deployed. During proximal stent deployment an Ellis type III perforation with brisk contrast extravasation occurred. The patient developed profound hypotension and loss of consciousness. Bedside echocardiography confirmed hemopericardium.

Abstract Body:

Decision-making: CPR was initiated and emergency pericardiocentesis evacuated 325 mL of hemorrhagic fluid, restoring circulation. A covered stent (Graftmaster 3.5×26 mm) was implanted to seal the perforation. Deployment stopped the leak but acutely occluded the LCx ostium at the bifurcation, precipitating severe bradycardia and recurrent arrest. The team resumed CPR and the operator punctured the covered stent to gain LCx access. Balloon angioplasty of the LCx ostium restored flow. High-pressure post-dilatation of LAD stents was then performed to optimize expansion.

Conclusion: This case highlights the critical importance of rapid, coordinated intervention in Ellis type III coronary perforation. Timely pericardiocentesis and covered stent implantation can be lifesaving, but in bifurcation anatomy the risk of side-branch occlusion is significant. When a covered stent compromises a major branch such as the LCx, immediate mechanical

correction, including stent puncture and balloon angioplasty, can restore perfusion and prevent fatal outcomes. This case underscores the need for technical preparedness, prompt decision-making, and seamless teamwork when managing complex PCI complications.

Session Title: Complex Cases in Valvular Disease, Structural Interventions, Coronary Interventions and Ischemic Heart Diseases

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: 25 MG OVER 25 HOURS: ULTRA-SLOW FLOW THROMBOLYSIS SALVAGES A THROMBOSED MECHANICAL AV VALVE IN A HIGH-RISK FONTAN PATIENT

Author Block: Madel HIDALGO, Tan Ju Le, Jie Sheng Foo, Phong Teck Lee, Limin Yan, National Heart Centre Singapore, Singapore, Singapore

Background: Prosthetic valve thrombosis in Fontan patients carries high mortality. Redo surgery is often prohibitive and standard-dose thrombolysis risks major bleeding in cyanotic heart disease with liver dysfunction. Ultra-slow low-dose alteplase has emerged as a safer alternative in selected cases.

Case: A 20 y.o. female with right atrial isomerism, complete atrioventricular septal defect, hypoplastic left ventricle, and Fontan completion had undergone mechanical common AV valve replacement and ascending aortic grafting in 2022. She presented to our center with heart failure symptoms after months of warfarin non-compliance. Echocardiography showed progressive rise in mean transvalvular gradient highly suspicious for subacute prosthetic valve thrombosis. She rapidly developed cardiogenic shock, type 1 respiratory failure requiring high-flow nasal cannula, KDIGO-3 acute kidney injury, and initial INR >8.0.

Abstract Body:

Decision-making: After multidisciplinary review, surgical/ECMO rescue was deemed unacceptably high risk. Following INR correction with intravenous vitamin K, ultra-slow thrombolysis was administered: alteplase 25 mcg/h over 25 hours (total 25 mg) followed by 6-hour unfractionated heparin bridge to VKA. Serial echocardiography demonstrated dramatic gradient reduction (20 → 2-3 mmHg within 48 h) with normalised leaflet motion and only mild-moderate prosthetic regurgitation. The only bleeding event was a self-limiting upper-limb haematoma from arterial line extravasation. Diuresis and brief inotropic support reversed cardiorenal syndrome. The patient was discharged on day 10 in stable condition with revised anticoagulation (target INR 2.5-3.5). Four-month follow-up echocardiography confirmed sustained normal valve function (mean gradient 2 mmHg).

Conclusion: Ultra-slow low-dose alteplase (1 mg/h for 25 h) was highly effective and safe for subacute mechanical AV valve thrombosis in a high-

surgical-risk Fontan patient, achieving complete resolution without major complications. This strategy merits consideration as first-line therapy in similar complex congenital cases with interrupted anticoagulation.

Session Title: **Complex Cases in Heart Failure and Cardiomyopathies**

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: SEVERE AORTIC STENOSIS AND HYPERTROPHIC CARDIOMYOPATHY: UNVEILING DYNAMIC LEFT VENTRICULAR OUTFLOW TRACT OBSTRUCTION AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Author Block: Camille Corpuz, Willette Valjean Go, Krishnamurti Mina, Raul Lapitan, Juan Armando Diaz, Joseph Raymond Cuaresma, Timothy Dy, Jessielyn Escaño Sia, Makati Medical City, Makati, Philippines

Abstract Body: **Background:** The co-existence of severe aortic stenosis (AS) and hypertrophic cardiomyopathy (HCM) is rare. Relief of fixed obstruction can unmask dynamic LVOT (left ventricular outflow tract) obstruction complicating management.

Case: An 81-year-old female with controlled hypertension presented with a one-month history of progressive exertional dyspnea and orthopnea. Baseline ECG showed left ventricular hypertrophy with strain pattern. Echocardiography revealed severe calcific aortic stenosis (peak gradient 130.99 mmHg, valve area 0.48 cm²), ejection fraction of 47%, and asymmetric septal hypertrophy. She underwent TAVR and post-op echocardiogram showed an improved aortic valve area of 1.81 cm². However, new systolic anterior motion (SAM) of the mitral valve was seen, with markedly elevated left ventricular intracavitary gradients (basal: 98 mmHg, mid: 144 mmHg, apical: 176 mmHg) despite successful valve deployment. These findings were consistent with an obstructive type of hypertrophic cardiomyopathy.

Decision-making: Mavacamten was initiated and after one month, echocardiography showed marked reduction in intracavitary gradients (basal 9, mid 10, apical 48 mmHg) and septal hypertrophy.

Conclusion: In severe AS with coexisting HCM, TAVR can precipitate or worsen dynamic obstruction. Early recognition of this hemodynamic shift is essential

for timely and appropriate management.

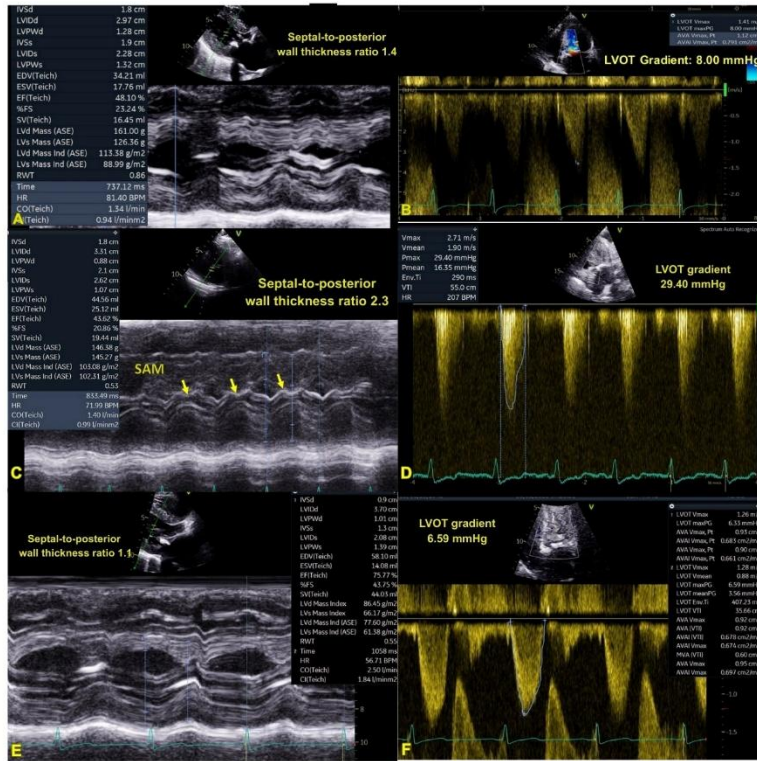


Figure 1 (A-B) Baseline TTE with doppler studies showing on (A) M-mode: a septal to posterior wall thickness ratio of 1.4 and a (B) CWD revealing an LVOT gradient of 8 mmHg. (C-D) TTE post TAVR, following relief of the valvular obstruction showed the following findings on (C) M-mode: a new SAM now with a septal to posterior wall thickness ratio of 2.3 and an (D) elevated LVOT gradient of 29.40 mmhg despite successful valve deployment addressing aortic stenosis. (E-F) Serial TTE 1 month post Mavacamten therapy revealed (E) reduction in septal to posterior wall thickness ratio to 1.1 and (F) marked improvement in LVOT gradient to 6.59 mmHg

Legend: TTE – transthoracic echocardiogram; LVOT = left ventricular outflow tract; CWD = Continuous wave doppler; SAM = Systolic anterior motion of the mitral valve

Session Title: **Complex Cases in Heart Failure and Cardiomyopathies**

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: GENERAL ANESTHESIA TRIGGERED THYROID STORM COMPLICATED BY ACUTE FULMINANT MYOCARDITIS: A CASE REPORT

Author Block: Evita Stephanie, Inne P. Farissa, Budhi Asih Regional General Hospital, East Jakarta, Indonesia, Budhi Asih Regional General Hospital, East Jakarta, Indonesia

Background: Thyroid storm is a rare endocrine emergency that may be precipitated by exposure to general anesthesia. Cardiovascular complications, including severe tachycardia, acute heart failure, and infrequently fulminant myocarditis, significantly increase morbidity and mortality.

Case: A 51-year-old female underwent open ureterolithotomy under general anesthesia. Postoperatively in the intensive care unit, she exhibited severe tachycardia, deteriorating hemodynamic instability, altered mental status, and fever. Electrocardiography showed right bundle branch block. Bedside echocardiography revealed moderate LV dysfunction (36%) with akinesia in anterior, anteroseptal, inferoseptal, and anterolateral regions, with RV dysfunction (TAPSE 15 mm). Troponin I level was 2692 ng/L. TSH result was 0.12 μ IU/mL, while free T4 showed 63.30 pmol/L. Management included mechanical ventilation, norepinephrine, diuretics, beta-blocker, anti thyroid agents, anti-inflammatory therapy (ibuprofen, colchicine), and sepsis therapy (antibiotics, IV corticosteroids).

Abstract Body:

Decision-making: Thyroid storm is an endocrine emergency whose diagnosis is primarily clinical. Tachycardia, fever, or hemodynamic instability are easily attributed to anesthetic complications, hypovolemia, or sepsis, which ambiguity may delay intervention. Cardiac dysfunction is one of the most dangerous complications of thyroid storm, exerting profound effects on myocardial oxygen demand, adrenergic receptor sensitivity, and cardiac electrophysiology. While tachycardia and high-output heart failure are more commonly recognized, acute fulminant myocarditis represents a rarer manifestation. Myocarditis associated with thyrotoxicosis is thought to result from immune-mediated inflammation, catecholamine toxicity, and direct metabolic stress on the myocardium.

Conclusion: We report severe presentation of thyroid storm precipitated by general anesthesia, complicated by suspected acute fulminant myocarditis. The diagnosis was significantly aided by prompt bedside echocardiography, which revealed profound ventricular dysfunction and guided timely therapeutic interventions.

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: BRASH SYNDROME: A CASE SERIES OF 2 PATIENTS AT A TERTIARY CARDIOLOGY CENTER IN INDIA AND REVIEW OF THE PATHOPHYSIOLOGIC VICIOUS CYCLE

Author Block: Saket Satyasham Toshniwal, Sameer Rane, Shantanu Deshpande, Somnath Mallakmir, Samhita Purandare, Satyasham Shriramji Toshniwal, DY patil school of medicine, Navi mumbai, India, Shriram heart and eye care, Solapur, India

Background: A self-reinforcing cycle of abnormal cardiac conduction, renal failure, and electrolyte imbalance is known as BRASH syndrome (Bradycardia, Renal Failure, AV node Blockade, Shock, hyperkalemia). South Asian realworld data is still hard to come by. This case series highlights the importance of early recognition, medication review and renal monitoring in patients on AV-nodal blockers and underscores the often-overlooked burden of BRASH syndrome in Indian practice especially in older or renal impaired patients.

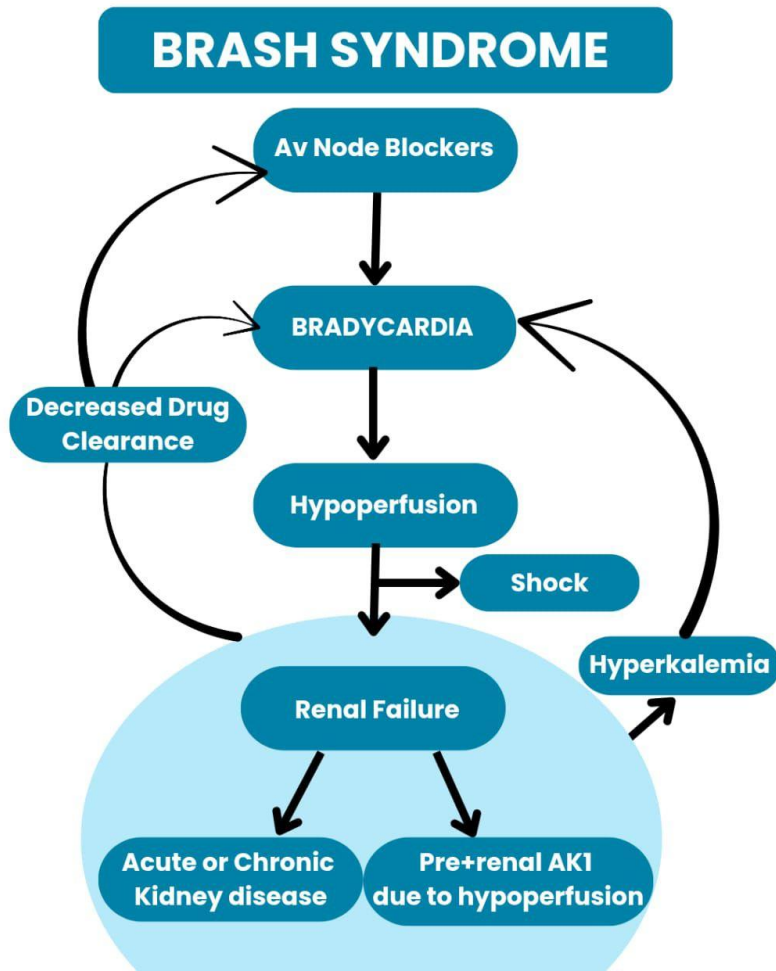
Abstract Body: **Case:** Case 1: An 80-year-old man with HFrEF, AF on β -blocker/amiodarone, and CKD presented with syncope, hypotension (70/40), and bradycardia (28 bpm). ECG showed CHB. Labs: Cr 3.4 mg/dL (baseline 1.8), K^+ 7.1—fulminant BRASH in an elderly polypharmacy patient.

Case 2: A 47-year-old woman with CKD, diabetes, hypertension, and on metoprolol presented after syncope following diarrhoeal illness. She was bradycardic (36 bpm) and hypotensive (84/52). ECG showed peaked T waves. Labs: Cr 2.9 mg/dL (baseline 1.5), K^+ 6.5—volume depletion precipitating BRASH.

Decision-making: Diagnosis of BRASH was made and treated as per protocols

Conclusion: BRASH syndrome is still underdiagnosed in India. Prompt identification of the bradycardia-renal failure-hyperkalemia loop is essential to prevent rapid deterioration. This series emphasises the importance of close renal monitoring and cautious β -blocker use, especially in patients with

polypharmacy, CKD and the elderly



Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: PULMONARY VEIN AND POSTERIOR WALL DURABILITY AT REPEAT ABLATION AFTER PULSED FIELD ABLATION: SINGLE-CENTRE COHORT AND META-ANALYSIS

Author Block: Duron Prinsloo, Sarah Paistry, Hui-Chen Han, Nitesh Nerlekar, Emily Kotschet, Francis Ha, Victorian Heart Institute and Victorian Heart Hospital, Clayton, Australia

Background: Pulsed field ablation (PFA) has been widely adopted for the treatment of atrial fibrillation (AF), but real-world data on the durability of pulmonary vein (PV) and posterior wall (PW) lesion sets after index PFA remain limited.

Methods: We conducted a retrospective single-centre cohort study and a meta-analysis of published cohorts. Consecutive patients undergoing repeat ablation for recurrent atrial arrhythmia after index PFA with a pentaspline catheter (Farapulse/Farawave, Boston Scientific, US) were identified. Index procedures targeted PV isolation with optional PW ablation. Primary outcomes were the incidence of repeat ablation and durability of PV and PW isolation at the repeat procedure; these endpoints were also extracted from published cohorts treated with the same catheter.

Abstract Body: **Results:** Among 751 index PFA procedures, repeat ablation for recurrent atrial arrhythmia was performed in 50 patients (6.7%) after a median of 6.8 months (IQR 3.2-10.1). The recurrent rhythm was AF in 48%, atrial tachycardia/flutter in 36%, and both in 16%. Persistent AF at index PFA was associated with a higher likelihood of repeat ablation ($p=0.03$). At the repeat procedure, all PVs remained isolated in 18/48 patients (38%). PV reconnection more commonly affected the superior veins: right superior 21/48 (44%), left superior 19/48 (40%), right inferior 12/48 (25%) and left inferior 10/48 (21%) ($p=0.005$). PW reconnection was observed in 16/23 patients (70%) who had PW ablation at index PFA. Meta-analysis of six additional cohorts ($n=708$) showed a pooled repeat-ablation rate after PFA of 8.8% (95% CI 0.05-0.11), with PV reconnection in 57% (95% CI 0.48-0.65) and PW reconnection in 55% (95% CI 0.39-0.71).

Conclusion: PV and PW isolation showed limited durability after PFA among patients with recurrent arrhythmia in both the single-centre cohort and meta-analysis, supporting refinement of PFA strategies to improve lesion durability and long-term outcomes.

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: BLEEDING PREVALENCE ASSOCIATED WITH ANTICOAGULATION IN PATIENTS WITH ATRIAL HIGH-RATE EVENTS (AHRE): A SINGLE CENTRE STUDY

Author Block: M Ramli Mohammad Akram, Imran Zainal, Md Nor Ashikin, University Malaya, Kuala Lumpur, Malaysia

Background: Cardiac Implantable Electronic Devices (CIEDs) frequently detect Atrial High-Rate Events (AHRE), which increase stroke risk, leading to debate on the optimal use of oral anticoagulation due to bleeding concerns. The purpose of this study is to examine the prevalence, severity, and predictors of bleeding among anticoagulated AHRE patients in a tertiary centre

Methods: This retrospective observational study included 288 patients (mean age 76.6 years; 54.2% female) with CIED-detected AHRE and/or atrial fibrillation at a single centre. Patients on oral anticoagulation (OAC) for > 3months were analyzed, with bleeding events classified by ISTH criteria and predictors assessed using logistic regression.

Abstract Body: **Results:** Among the 288 patients, 163 (56.6%) received anticoagulation, predominantly NOACs (87.1%). A total of 38 patients (13.2%) experienced bleeding, including 9 major (2.8%) and 29 minor (10.1%) events. In multivariable analysis, only AHRE frequency (aOR) 2.44, p=0.01) and anticoagulation duration (aOR 1.02, p=0.003) remained independent predictors
Conclusion: Bleeding complications occurred in roughly one in ten anticoagulated AHRE patients, with risk linked mainly to arrhythmia burden and treatment duration. Anticoagulation can be safely initiated in selected AHRE patients with appropriate monitoring, regular reassessment, and active measures to minimize bleeding risk, as stroke prevention remains the central priority

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Figure 1: Distribution of Bleeding events

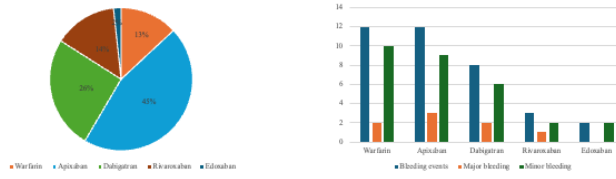


Figure 2: Distribution of Anticoagulation Types and Bleeding Events

Anticoagulant	Total patients (%)	Any bleeding (%)	Major bleeding	Minor bleeding
Warfarin	21 (12.9)	12 (57.1)	2	10
Apixaban	73 (44.8)	12 (16.4)	3	9
Dabigatran	41 (25.2)	8 (19.5)	2	6
Rivaroxaban	23 (14.1)	3 (13.0)	1	2
Edoxaban	5 (3.1)	2 (40.0)	0	2
Total NOACs	142 (87.1)	25 (17.6)	6	19
Overall total	163 (100)	37 (22.7)	8	29

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: HEALING A BLOCKED AND BROKEN HEART

Author Block: Rakavi R, DEVESH KUMAR, Atit ., ALL INDIA INSTITUTE OF MEDICAL SCIENCES, New Delhi, India

Abstract Body:

Background: Complete heart block (CHB) is a rare complication of Takotsubo syndrome (TTS). Recognising this atypical presentation is vital for prompt management

Case: Seventy year lady presented with recurrent syncope for one week. Her symptoms began after an emotional stress of losing her son in a road traffic accident. She was bradycardic with heart rate of 35/min, BP 150/90mmHg. Electrocardiogram confirmed CHB with a ventricular escape rate of 30/min. Echocardiography revealed left ventricular (LV) apical akinesia and ejection fraction (LVEF) of 40%. Troponin levels were twice the normal limits. A temporary pacemaker was inserted. Coronary angiography showed normal coronaries. LV angiogram showed the characteristic apical ballooning with basal hypercontractility, consistent with TTS. Given the symptomatic CHB, a permanent pacemaker was implanted. At 3-month follow-up, there was full resolution of regional wall motion abnormality and normal LVEF.

Decision-making: The presentation with CHB, LV dysfunction, and biomarker elevation mimics Acute Coronary Syndrome (ACS). Ruling out ACS via coronary angiography was thus the crucial first step. Excluding ACS and identifying apical ballooning supported the provisional TTS diagnosis. Symptomatic CHB required early pacing for hemodynamic stability and recovery of LV function. Our diagnosis was confirmed by resolution of LV dysfunction at follow-up

Conclusion: CHB is a rare presentation of TTS. Early pacing is necessary for

management.



Session Saturday Poster Session
Title:

Topic 1: Cardiac Arrhythmias

Publishing A CHOLINERGIC CULPRIT: ACOTIAMIDE-INDUCED BIDIRECTIONAL
Title: VENTRICULAR TACHYCARDIA

Author Rakavi R, Shitij Chaudhary, Sumit Kumar, ALL INDIA INSTITUTE OF MEDICAL
Block: SCIENCES, NEW DELHI, India

Abstract
Body:

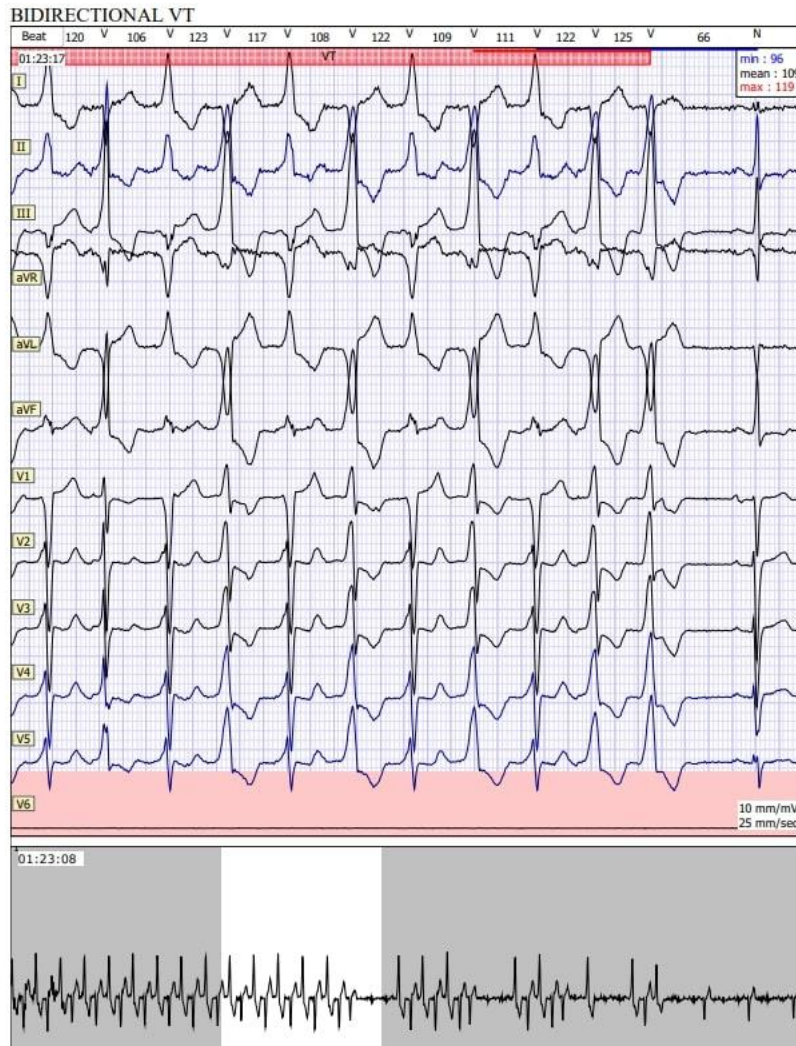
Background: Bidirectional ventricular tachycardia (BVT) is typically associated with digoxin toxicity or catecholaminergic polymorphic ventricular tachycardia. We report a novel case of BVT induced by acotiamide unmasking a cholinergic proarrhythmic mechanism

Case: 56-year-old male with dilated cardiomyopathy on medical therapy presented with recurrent palpitations for one month. He denied fever, infection, worsening heart failure symptoms. Clinical examination was unremarkable. Electrocardiogram showed sinus rhythm. Echocardiography revealed left ventricular ejection fraction of 35%. Holter captured episodes of BVT. Electrolytes, troponin, and inflammatory markers were normal. On review of the patient's records, he had been started on acotiamide for dyspeptic symptoms six weeks prior to the onset of symptoms. Acotiamide was discontinued. Repeat 24-hour Holter monitor performed showed sinus rhythm. At 3-month follow-up, patient remained asymptomatic

Decision-making: Acotiamide was identified as the probable culprit. Generally considered safe, its mechanism of acetylcholinesterase inhibition and muscarinic antagonism increases acetylcholine levels. Cholinergic modulation of ventricular excitability in a susceptible substrate like dilated cardiomyopathy may have facilitated the triggered activity

Conclusion: Acotiamide-induced BVT in structural heart disease is a novel presentation. This highlights the importance of medication history in

unexplained arrhythmias



Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: LAMBDA WAVE ECG PATTERN: BRIDGING ISCHEMIA AND CHANNELOPATHY IN A YOUNG MALE

Author Block: Rakavi R, Sumit Kumar, Neeraj Parakh, Rajiv Narang, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI, India

Abstract Body:

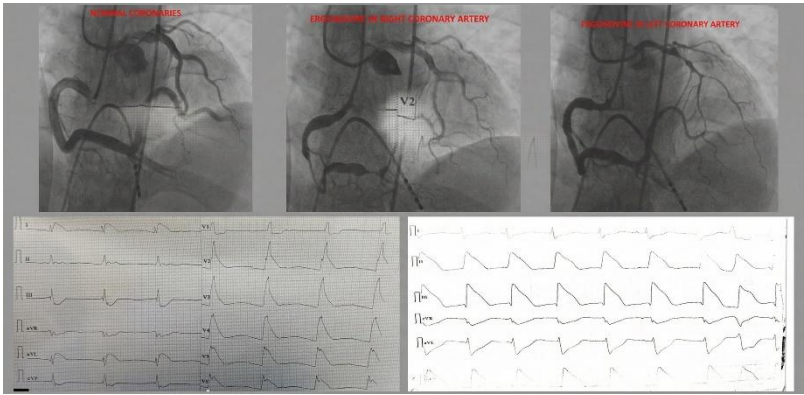
Background: Lambda-wave electrocardiogram (ECG) pattern with triangular QRS-T signifies profound transmural ischemia and a high risk of ventricular fibrillation. We present a rare case of variant angina presenting with Lambda waves and channelopathy overlap

Case: 35 year male presented with recurrent nocturnal retrosternal chest pain and syncope. ECG recorded during a pain episode revealed Lambda-wave pattern. Echocardiography and coronary angiography were normal. During hospitalization, he suffered recurrent angina with sinus arrest and non-sustained ventricular tachycardia. Ergonovine provocation test for coronary vasospasm was positive with severe spasm (>90%) and typical pain. Bizarre ECG pattern resembling Brugada like ST elevations lead to genetic testing which identified a heterozygous SCN5A variant. While calcium channel blockers are the mainstay of therapy, they do not eliminate SCD risk in malignant phenotypes with possible channelopathy. Consequently, a dual-chamber Implantable Cardioverter Defibrillator (ICD) was implanted

Decision-making: The Lambda wave is an ECG marker in coronary vasospasm with high risk for malignant arrhythmias. This pattern results from transmural voltage gradients dispersion as in Brugada syndrome. Recognition needs prompt aggressive management with coronary vasodilators and consideration for ICD implantation

Conclusion: Vasospastic angina can manifest as Lambda waves which is

malignant and a possible association with Brugada syndrome



Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: TEMPORAL TRENDS AND SEGMENTAL CHANGES IN AGE-ADJUSTED MORTALITY ASSOCIATED WITH ATRIAL FIBRILLATION RISK FACTORS

Author Block: Shree Rath, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, India

Background: Atrial fibrillation (AF) is a leading cause of cardiovascular morbidity and mortality, with risk factors varying across income regions.

Methods: We extracted age-standardized mortality rates for AF-related risk factors from the GBD database and estimated temporal trends using Joinpoint regression analysis. The average annual percentage change (AAPC) and annual percentage change (APC) with 95% confidence intervals (CI) were calculated to assess overall and period-specific trends. Statistical significance was determined at $p < 0.05$.

Results: The overall age-adjusted mortality associated with all AF risk factors increased significantly (0.43 (95%CI: 0.08 to 0.78)). High body mass index showed the steepest rise, with an AAPC of 2.80 (95% CI: 1.53 to 4.10), driven by a significant increase from 1995 to 2021 (2.75, 95% CI: 1.00 to 4.53). Other environmental risks followed a similar trend, increasing from 1990 to 2015 (1.16, 95%CI: 0.60 to 1.73), but showing a non-significant decline after 2015 (-0.75, 95%CI: -5.72 to 4.48). High systolic blood pressure also contributed to the rising trend, with an AAPC of 0.31 (95%CI: 0.02 to 0.59), reflecting a steady increase from 1990 to 2018 (0.33, 95%CI: 0.00 to 0.67), followed by an insignificant decline. High alcohol use (AAPC: 0.79, 95%CI: -0.30 to 1.88) and dietary risks (0.20, 95%CI: -0.20 to 0.61) showed upward trends, but their contributions were not statistically significant. Tobacco use was the only factor associated with a significant decline in mortality, with an AAPC of -0.47 (95%CI: -0.79 to -0.15), reflecting a sustained reduction from 1994 to 2021 (APC: -0.55, 95%CI: -0.97 to -0.13). The overall trend for all risk factors showed an increase from 1990 to 2018 (APC: 0.45, 95%CI: 0.04 to 0.86), followed by an insignificant decline from 2018 to 2021.

Abstract Body:

Conclusion: The rising mortality associated with obesity, environmental risks, and high blood pressure underscores the urgent need for targeted public

health strategies to mitigate AF-related burden. These findings emphasize the importance of obesity prevention, blood pressure management, and environmental interventions in reducing AF-related mortality, particularly in high-burden regions.

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: DIVERGENT TRENDS IN ATRIAL FIBRILLATION MORTALITY: A SEX-STRATIFIED ANALYSIS OF RISK FACTORS DYNAMICS (1990-2021)

Author Block: Shree Rath, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, India

Background: Atrial fibrillation (AF) is a common cardiac arrhythmia with significant implications for morbidity and mortality.

Methods: Global Burden of Disease (GBD) data for 2021 was analyzed to explore the sex-stratified risk factors of AF mortality. The Annual Percent Change (APC), and the Annual Average Percentage Change (AAPC) were calculated to evaluate trends from 1990 to 2021, with statistical significance determined using p-values.

Results: In males, there was 4.10% annual increase in mortality associated with high body-mass index (BMI) from 1990-2016 [4.09%, 95% Confidence Interval (CI): 2.07-6.16]. The AAPC was 3.96% (CI: 2.47-5.44) with a highly significant p-value, indicating an increasing trend. In females, there was 2.2% annual increase in mortality associated with high BMI from 1995-2021 (APC: 2.27%, CI: 0.79-3.77). The AAPC was 2.33% (CI: 1.19-3.49), with a highly significant p-value. There was a decreasing trend in mortality related to tobacco use among males (-0.51%) and females (-1.2%). The AAPC was -0.42% (CI: -0.79 to -0.05) among males and -0.81% (CI: -1.30 to -0.32) among females. High systolic blood pressure was associated with 0.5% annual increase in mortality of males from 1990-2019 (APC: 0.53%, CI: 0.16-0.90). It caused 0.1% annual increase in mortality of females from 1994-2021 (0.12%, CI: -0.23 to 0.46). There was 0.50% AAPC (CI: 0.18 to 0.82) of males, and 0.17% AAPC (CI: -0.10 to 0.44) of females. There was 1.4% annual increase in mortality with high alcohol intake among males from 2002-21, but the results were not statistically significant (1.4%, CI: -0.9 to 3.79). Females showed 0.15% decline in mortality from 1994-2021, but again the results were not statistically significant (APC: -0.15%, CI: -2.03 to 1.77). There was 1% increase in AAPC of males, while 0.12% decline in AAPC of females in association with high alcohol intake. Dietary risks were associated with 0.54% increase in

Abstract Body:

mortality among males from 2006-21, while 0.15% decline among females from 1990-2009.

Conclusion: While other risk factors showed some changes, only environmental risks demonstrated a significant increase, highlighting the need for targeted interventions and further research.

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: COMPARATIVE RISK OF SUPRAVENTRICULAR ARRHYTHMIAS WITH TIRZEPATIDE VS SEMAGLUTIDE: A DUAL-DATABASE PHARMACOVIGILANCE STUDY WITH REGIONAL SUB-ANALYSIS

Author Block: Ratnadeep Biswas, Abhay A. Kapoor, Vishnu Ojha, Pratima Jasti, Jaideep Menda, Dighvijay Rajawat, Smit Thakkar, Ritu Yadav, All India Institute of Medical Sciences, Patna, India, ESIC Medical College & Hospital, Bihta, Patna, India

Abstract Body:

Background: Tirzepatide, a dual GIP/GLP-1 receptor agonist, demonstrates superior metabolic efficacy compared to selective GLP-1 agonists like Semaglutide. However, the arrhythmogenic safety of dual agonism remains understudied. We utilized two global databases to compare supraventricular arrhythmia (SVA) reporting between Tirzepatide and Semaglutide, with a specific Asia-Pacific sub-analysis.

Methods: We conducted a cross-sectional disproportionality analysis using the FDA Adverse Event Reporting System and the WHO VigiBase. We queried both repositories for "Tirzepatide" and "Semaglutide" as primary suspect drugs (2020-2025). The primary endpoint was the Reporting Odds Ratio (ROR) of a composite SVA endpoint (Atrial Fibrillation, Atrial Flutter, Supraventricular Tachycardia). A detailed demographic subset of 527 confirmed SVA cases was stratified into "Western" (Americas, Europe) and "Asia-Pacific" (Asia, Oceania) cohorts to assess regional signal consistency using Fisher's exact test.

Results: FDA analysis included 111,933 Tirzepatide and 61,813 Semaglutide reports. The SVA composite was identified in 188 Tirzepatide (**0.17%**) versus 339 Semaglutide cases (**0.55%**). Tirzepatide demonstrated a significantly lower reporting probability for SVA (**ROR: 0.31; 95% CI: 0.26-0.37; p<0.001**). These findings were strongly corroborated by the WHO global dataset, analyzing 147,216 Tirzepatide and 104,538 Semaglutide reports. Tirzepatide accounted for 159 SVA events (**0.11%**) compared to 315 for Semaglutide (**0.30%**), yielding a similarly reduced risk (**ROR: 0.36; 95% CI: 0.30-0.43; p<0.001**).

In regional sub-analysis, the Asia-Pacific cohort displayed a safety pattern

consistent with the Western cohort ($p=0.23$), suggesting no significant geographic disparity.

Conclusion: In this analysis of over 400,000 reports, Tirzepatide demonstrated a favorable electrophysiological profile with a **64-69% lower relative reporting risk** for SVA compared to Semaglutide. This advantage was consistent across Western and Asia-Pacific populations, supporting the hypothesis that GIP agonism may attenuate GLP-1 associated arrhythmogenicity.

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: CEREBROVASCULAR SAFETY PROFILE OF EDOXABAN VERSUS RIVAROXABAN: A GLOBAL PHARMACOVIGILANCE ANALYSIS WITH IMPLICATIONS FOR ASIAN POPULATIONS

Author Block: Ratnadeep Biswas, Vishnu Shankar Ojha, Dighvijay Rajawat, Smit Thakkar, Abhay A. Kapoor, Pratima Jasti, Farheen Vhora, Ritu Yadav, All India Institute of Medical Sciences, Patna, India, Verde Valley Medical Center, Midwestern University, Cottonwood, AZ, USA

Background: East Asian populations exhibit a paradoxically higher susceptibility to intracranial hemorrhage (ICH) compared to Western cohorts. While Edoxaban is widely prescribed in Asia for its safety profile, real-world comparative data against Rivaroxaban regarding cerebrovascular bleeding is limited. We aimed to quantify the reporting odds of ICH events between Edoxaban and Rivaroxaban.

Methods: We conducted a disproportionality analysis using the FDA Adverse Event Reporting System (FAERS). We queried for "Edoxaban" and "Rivaroxaban" as primary suspect drugs. The primary endpoint was the Reporting Odds Ratio (ROR) of a composite endpoint comprising "Intracranial Haemorrhage," "Cerebral Haemorrhage," and "Hemorrhagic Stroke." A regional sensitivity analysis stratified event cases by reporter country to assess the representation of Asian versus Non-Asian demographics in the safety signal.

Results: The analysis included **147,541** Rivaroxaban and **1,255** Edoxaban reports. The composite ICH endpoint was identified in **6,918** Rivaroxaban cases (4.69%) versus **39** Edoxaban cases (3.11%). Edoxaban was associated with a significantly lower reporting odds for intracranial bleeding compared to Rivaroxaban (**ROR: 0.65; 95% CI: 0.47-0.90; p=0.01**). In the regional sub-analysis of confirmed ICH cases, Asian patients accounted for **30.8%** (12/39) of the Edoxaban cohort, compared to only **4.3%** (296/6,918) of the Rivaroxaban cohort. Despite this substantial enrichment of the Edoxaban group with Asian patients, a demographic historically predisposed to higher hemorrhagic risks, the aggregate safety signal remained significantly superior to Rivaroxaban.

Conclusion: In this large-scale real-world analysis, Edoxaban demonstrated a

superior cerebrovascular safety profile with a **35% lower reporting risk** for intracranial hemorrhage compared to Rivaroxaban. Notably, this safety benefit persisted even though the Edoxaban cohort contained a 7-fold higher proportion of Asian patients. These findings support the preferential use of Edoxaban in Asian populations to minimize catastrophic bleeding complications.

Session Title: Saturday Poster Session

Topic 1: Cardiac Arrhythmias

Publishing Title: ECHOES OF MALIGNANCY: FOCAL ATRIAL TACHYCARDIA TRIGGERED BY A RIGHT ATRIAL MASS

Author Block: Muhammad Rajhi Amer, Christie Anne Pabelico, Heart and Vascular Institute, Perpetual Help Medical Center, Las Pinas, Philippines

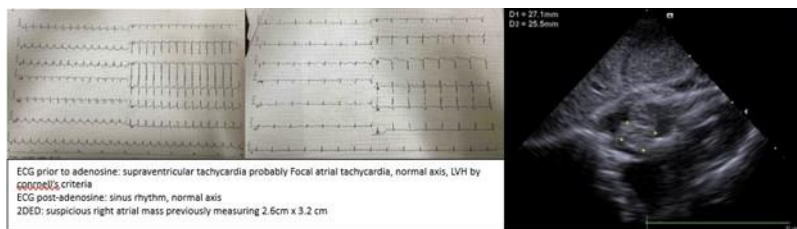
Background: Focal atrial tachycardia (AT) is uncommon and its occurrence with a cardiac tumor is rare.

Case: A woman with prior breast cancer and thoracic radiation presented with sudden palpitations. Electrocardiography (ECG) showed narrow-complex AT. Transthoracic echocardiography revealed a right atrial mass, and computed tomography showed tumor extension into the vena cava and pericardium. The arrhythmia terminated with adenosine. Catheter ablation was not feasible due to tumor involvement of the atrial wall. She remained stable on medical rate control.

Decision-making: Tumor-related AT may arise from direct myocardial infiltration or mechanical irritation. Multimodality imaging was essential in defining tumor extent and explaining arrhythmia origin. When anatomy precludes ablation, medical therapy remains the safest option. This case demonstrates the diagnostic value of ECG morphology and imaging correlation in identifying focal triggers.

Conclusion: Cardiac tumors may serve as arrhythmogenic substrates for focal AT. Comprehensive imaging and individualized management are critical when interventional therapy is not feasible.

Abstract Body:



Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: INTERIM ANALYSIS OF REAL-WORLD EFFECTIVENESS AND SAFETY OF IRBESARTAN AND AMLODIPINE SINGLE PILL COMBINATION IN KOREAN PATIENTS WITH HYPERTENSION: A PROSPECTIVE OBSERVATIONAL STUDY

Author Block: Jinho Shin, JoonHyouk Choi, BokJin Hyun, Yeokyeong Kim, GaRam Im, Seunghyun Yoo, Hanyang University College of Medicine, Seoul, South Korea

Background: This study provides the first real-world evidence on effectiveness and safety of Irbesartan/Amlodipine (IRB/AML) single pill combination (SPC) in Korean patients in routine clinical practice.

Methods: This prospective, multicenter observational study enrolled Korean adults with hypertension initiating IRB/AML (150/5, 150/10 or 300/5 mg) and evaluated outcomes after 3 months. Endpoints included changes in systolic blood pressure (SBP) and diastolic blood pressure (DBP), BP control <140/90 mmHg (or <130/80 mmHg if \geq one risk factor) and response rates (≥ 20 or ≥ 10 mmHg). Subgroup analyses were performed based on baseline SBP ≥ 160 mmHg, age ≥ 45 years and prior antihypertensive therapy. Safety was assessed by monitoring adverse events (AEs). Interim analysis completed (n=1,138; 45.5% of planned); final report due Dec 2026.

Abstract Body:

Results: Mean age was 62.4 years, and 56.2% were male. Overall control and response rates were 72.0% and 40.9%, respectively. Greater SBP reductions were observed in patients with baseline SBP ≥ 160 mmHg and treatment-naïve individuals. Least square mean and standard error reductions in SBP/DBP were $26.8 \pm 0.57 / 13.1 \pm 0.45$, $23.3 \pm 2.09 / 10.3 \pm 1.62$ and $23.8 \pm 1.62 / 14.0 \pm 1.26$ mmHg for 150/5, 150/10 and 300/5 mg, respectively. AEs occurred in 9.4%, with one serious AE unrelated to treatment.

Conclusion: This interim analysis demonstrates IRB/AML effectively reduces blood pressure with a favorable safety profile in Korean patients in real-world practice.

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Table 1. Endpoints for Irbesartan and Amlodipine Single Pill Combination Therapy

Endpoints	150/5 mg (N=813)	150/10 mg (N=51)	300/5 mg (N=87)	Total (N=951)
SBP, mmHg				
Baseline SBP (Mean ± SD)	153.24±16.46	151.71±15.56	148.72±17.13	152.75±16.51
Change from Baseline to Month 1 (Mean ± SD)	-19.20±17.88	-13.05±14.68	-15.16±17.85	-18.57±17.79
P-value	<0.0001	<0.0001	<0.0001	0.0001
Change from Baseline to Month 3 (Mean ± SD)	-22.24±19.23	-17.30±15.48	-16.79±17.67	-21.44±18.97
LS Mean ± SE	-26.77±0.57	-23.26±2.09	-23.82±1.62	-
P-value	<0.0001	<0.0001	<0.0001	<0.0001
DBP, mmHg				
Baseline DBP (Mean ± SD)	88.90±13.13	88.06±10.19	86.93±13.79	88.68±13.05
Change from Baseline to Month 1 (Mean ± SD)	-9.81±12.43	-7.12±9.30	-8.16±11.93	-9.54±12.26
P-value	<0.0001	<0.0001	<0.0001	0.0084
Change from Baseline to Month 3 (Mean ± SD)	-11.05±12.53	-7.22±10.46	-10.68±13.33	-10.80±12.52
LS Mean ± SE	-13.10±0.45	-10.26±1.62	-14.01±1.26	-
P-value	<0.0001	<0.0001	<0.0001	0.0001
Control Rate				
Month 1 (N, %)	419 (57.95)	27 (62.79)	22 (34.38)	468 (56.39)
95% CI	(54.26, 61.58)	(46.73, 77.02)	(22.95, 47.30)	(52.93, 59.79)
Month 3 (N, %)	543 (72.69)	37 (74.00)	54 (64.29)	634 (71.96)
95% CI	(69.34, 75.86)	(59.66, 85.37)	(53.08, 74.45)	(68.87, 74.91)
Response Rate				
Month 1 (N, %)	280 (38.73)	8 (18.60)	15 (23.44)	303 (36.51)
95% CI	(35.16, 42.39)	(8.39, 33.40)	(13.75, 35.69)	(33.22, 39.88)
Month 3 (N, %)	322 (43.11)	12 (24.00)	26 (30.95)	360 (40.86)
95% CI	(39.52, 46.75)	(13.06, 38.17)	(21.31, 41.98)	(37.60, 44.19)

Abbreviations: SBP, Systolic Blood Pressure; DBP, Diastolic Blood Pressure; SD, Standard Deviation; LS Mean, Least Square Mean; SE, Standard Error, CI, Confidence Interval.

Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: IMPACT OF PHYSICAL ACTIVITY INTENSITY AND VOLUME ON ABDOMINAL AORTIC CALCIFICATION:INSIGHTS FROM NHANES

Author Block: Peiqi Liu, Zhi Lv, Shiyuan Qiao, Jiahui Yao, Dengfeng Gao, Second Affiliated Hospital of Xi'an Jiaotong University, Xi'an, People's Republic of China, Xi'an Jiaotong University, Xi'an, People's Republic of China

Background: Abdominal aortic calcification (AAC) strongly predicts cardiovascular events, yet the relative impact of physical activity intensity versus volume on AAC remains unclear.

Methods: We analyzed NHANES 2013-2014 physical activity monitor data using Monitor-Independent Movement Summary (MIMS) units to quantify daily volume (DailyMIMS) and peak intensity over 1-minute (Peak1MIMS) and 30-minute (Peak30MIMS) windows. AAC severity was assessed via Kauppila scoring. Cluster analysis was performed to identify distinct population phenotypes. Multivariable regression examined associations with AAC and severe AAC (SAAC, score > 6), with restricted cubic splines evaluating dose-response relationships and subgroup analyses exploring effect modification.

Abstract Body:

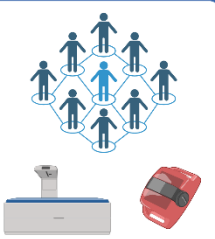
Results: Among 2,154 participants, three distinct clusters were identified. Peak intensities were inversely associated with AAC: Peak1MIMS ($\beta = -0.19$, 95% CI: -0.31, -0.08) and Peak30MIMS ($\beta = -0.13$, 95% CI: -0.24, -0.03). Highest versus lowest quartile had 0.83 and 0.72 units lower AAC scores (both $P < 0.01$). Dose-response curves demonstrated threshold effects. However, no significant association was observed for DailyMIMS with AAC. No MIMS metrics associated with SAAC. Stronger negative associations for peak intensity were noted in older adults, hypertensives, and former smokers.

Conclusion: Activity intensity, independent of volume, associates with lower AAC severity, with pronounced benefits in high-risk populations.

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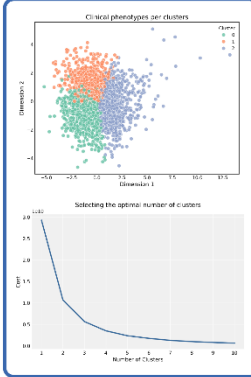
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A Study design

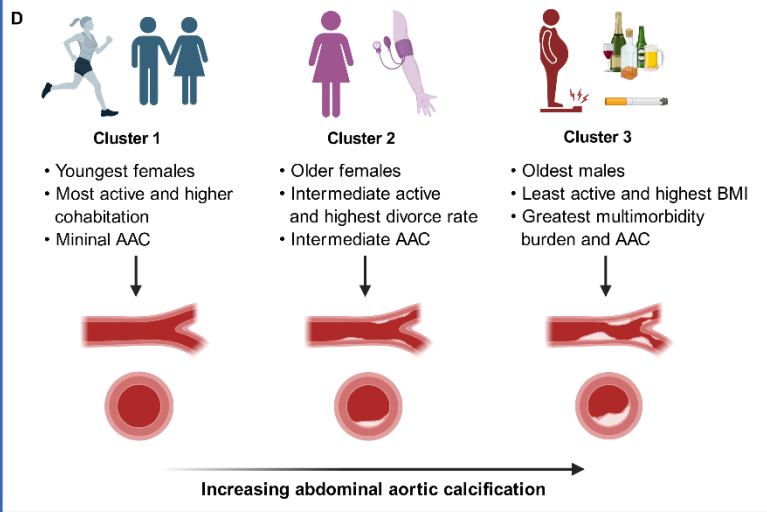
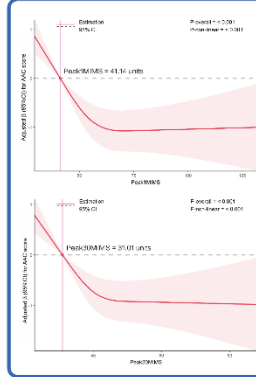


- NHANES 2013-2014 (N = 2,154)
- AAC score from DXA
- Physical activity data from activity monitor

B Cluster analysis



C Regression analysis



Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: EARLY DAPAGLIFLOZIN IN ACUTE DECOMPENSATED HEART FAILURE: A PROSPECTIVE STUDY OF MULTIDIMENSIONAL BENEFITS FOR FUNCTIONAL RECOVERY AND CARDIOVASCULAR PREVENTION

Author Block: Lourensia Praha, Bonaventura Yogiswara, Tahari Bargas Prakoso, Feby Tegar Ksatria, jefry sianipar, Sofan Dhani, Yan Herry, RR Hari Hendriarti Satoto, Diponegoro University, Semarang, Indonesia, Kariadi General Hospital, Indonesia

Abstract Body: **Background:** Acute Decompensated Heart Failure (ADHF) is a high-risk window where congestion, frailty, and biomarker elevation rapidly accelerate progression. Conventional therapy often stabilizes patients but rarely restores functional resilience. Emerging evidence suggests dapagliflozin may go beyond hemodynamic effects, offering benefits that reach the level of muscle strength and patient-perceived well-being. This study explores whether initiating dapagliflozin early in ADHF can deliver multidimensional, prevention-oriented clinical gains.

Methods: A double-blind, randomized prospective trial enrolled 66 ADHF patients who received dapagliflozin 10 mg or placebo within 24 hours of admission, in addition to guideline-directed therapy. Handgrip strength (HGS), Kansas City Cardiomyopathy Questionnaire (KCCQ), and NT-proBNP were assessed at baseline and 30 days. In-hospital urine output and diuretic exposure were recorded to evaluate decongestive efficiency.

Results: Baseline characteristics were balanced. Dapagliflozin produced significantly greater cumulative urine output (13,184±8,890 mL vs 8,450±8,305 mL; p=0.026) and superior improvement in HGS (Δ6.6 kg vs Δ3.9 kg; p=0.008). Both groups showed marked within-group gains in all KCCQ domains, though intergroup differences were nonsignificant. Despite a higher baseline NT-proBNP (10,885 vs 9,810 pg/mL), the dapagliflozin group demonstrated a more robust 30-day NT-proBNP reduction (p=0.012), indicating enhanced decongestion and hemodynamic recovery.

Conclusion: Early dapagliflozin use in ADHF confers multidimensional functional and biomarker benefits, including superior muscle strength

recovery and greater NT-proBNP reduction. These findings support dapagliflozin as an adjunctive therapy that not only addresses acute instability but also contributes to long-term cardiovascular prevention by preserving function and accelerating physiological recovery.

Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

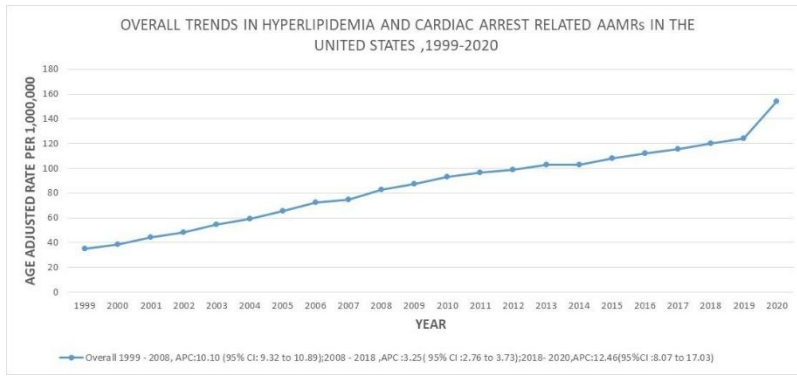
Publishing Title: TRENDS IN RACIAL AND DEMOGRAPHIC DISPARITIES IN MORTALITY RATES DUE TO CARDIAC ARREST AND HYPERLIPIDEMIA AMONG ADULTS AGED ≥ 45 YEARS IN THE UNITED STATES FROM 1999 TO 2020: A CDC WONDER DATABASE ANALYSIS

Author Block: Akash Kumar, Samiksha Jain, Nomesk Kumar, Eaman Fatima, Abdul Qadeer, Sara Jawed, Rahul Chowdhary, DARSHAN SHIVANNE GOWDA, Sana Rasheed, Hadia Nadeem, Liaquat University of Medical and Health Sciences, Hyderabad, Pakistan

Background: Cardiac arrest is a major cause of mortality in the U.S. and hyperlipidemia is a modifiable risk factor. National trends and demographic disparities in mortality involving both conditions remain unclear.

Methods: We analyzed CDC WONDER data (1999-2020) for adults aged ≥ 45 with cardiac arrest and hyperlipidemia listed on death certificates. Age-adjusted mortality rates (AAMRs) per 100,000 were calculated, and temporal trends assessed using annual percent change (APC) and average annual percent change (AAPC), stratified by sex, race/ethnicity, region, and urbanization.

Abstract Body: **Results:** A total of 233,877 deaths were recorded. AAMRs increased from 35.1 in 1999 to 154.1 in 2019 (AAPC: 5.96; $p < 0.001$), with sharp rises during 1999-2008 (APC: 10.1) and 2018-2020 (APC: 12.46). Men had higher rates than women (115.8 vs. 69.7). Asians had the highest AAMR (121.8), followed by Blacks (103.9), Hispanics (99.7), and Whites (86.2), while Hispanics showed the fastest increase. State-level rates ranged widely (32.9 in Maryland to 251.7 in Hawaii), and the West had the highest regional AAMR. Although nonmetropolitan areas had lower absolute rates, increases were steeper than in metropolitan areas (AAPC: 6.05 vs. 5.31).



Conclusion: Mortality involving cardiac arrest and hyperlipidemia increased markedly over two decades with substantial sex, racial, regional, and urbanization disparities. These findings underscore the need for targeted lipid management and prevention efforts in high-burden groups.

Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: PREDICTING ELEVATED CORONARY CALCIUM SCORES USING CLINICAL VARIABLES ALONE: A MACHINE LEARNING APPROACH FOR PREVENTIVE CARDIOLOGY

Author Block: Xucong Ruan, Doyoung Park, Swee Yaw Tan, Weien Chow, Lohendran Baskaran, National Heart Centre Singapore, Singapore, Singapore, Changi General Hospital, Singapore, Singapore

Abstract Body: **Background:** Coronary artery calcium score (CACs) is a cornerstone for cardiovascular risk stratification, yet access to computed tomography (CT) imaging remains variable. We evaluated whether a machine learning (ML) model using routine clinical variables could accurately predict CACS categories, enabling earlier identification of patients needing intensified preventive therapy.

Methods: A total of 1293 patients were recruited for the study. 39 patients were excluded due to missing variables. The CACS of the remaining 1254 patients were categorized as 0, mild (1-99), moderate (100-299), or severe (≥ 300). Predictor variables encompassed demographics, blood pressure, body mass index, and comorbidity profiles. Data exploration used distribution plots, pairwise analysis and correlation mapping. Multiple ML classifiers were trained and tuned using a one-vs-rest strategy. Discrimination was evaluated via receiver operating characteristic area under the curve (ROC-AUC) and feature importance profiling was performed to assess model interpretability. Institutional Review Board approval was obtained for the study.

Results: Age, hyperlipidemia on medication, hypertension, systolic blood pressure, sex, and diabetes demonstrated the strongest correlation with higher CACS ($r=0.20-0.46$). Distinct separations were observed between CACS 0 and non-zero categories across these parameters. After tuning, the model became more accurate, less dependent on a single variable, and better at distinguishing patients across all four levels of coronary calcification (AUC 0.75).

Conclusion: A ML model leveraging commonly collected clinical parameters can reliably predict CACS categories and identify patients at risk of coronary

calcification. Such a tool may enable earlier preventive interventions and guide selective use of CT calcium scoring in clinical practice.

Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: THE EFFICACY AND SAFETY OF REDUCED-DOSE VERSUS FULL-DOSE APIXABAN FOR EXTENDED TREATMENT IN PATIENTS WITH VENOUS THROMBOEMBOLISM: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Diana Marie T. San Pedro, Marla Briones, Michael Dela Cruz, Cardinal Santos Medical Center, San Juan City Metro Manila, Philippines

Background: Extended anticoagulation has been proposed to minimize the risk of venous thromboembolism (VTE) recurrence; however, bleeding remains a significant safety concern. Thus, dose reduction has been proposed, and among all anticoagulants, apixaban has shown a good safety profile. In recent years, more randomized controlled trials (RCTs) have been published focusing on apixaban, which can strengthen the evidence for its use. This study, therefore, aims to compare the efficacy and safety of extended full-dose apixaban versus reduced-dose apixaban for VTE.

Methods: A meta-analysis was performed that included RCTs comparing full (5mg) versus reduced-dose (2.5mg) apixaban in terms of VTE recurrence, bleeding, and adverse events. Two researchers conducted the literature search from PubMed, LILACS, HERDIN, Cochrane, Clinicaltrials.gov, Google Scholar, and ResearchGate. Pooled hazard ratio (HR) and risk ratio (RR) were presented. Stata MP version 17 software was used for the meta-analysis.

Abstract Body:

Results: A total of four RCTs with 5034 patients were included, and half were randomized to the reduced-dose group. All patients underwent full-dose anticoagulation for at least 6 months, followed by extended treatment time, which was set at 12 months. Pooled analysis revealed no significant difference in VTE recurrence between full and reduced-dose groups, regardless of treatment effect estimate (RR=1.06; 95%CI: 0.69-1.53; p=0.90; HR=0.90; 95%CI: 0.56-1.43; p=0.64). Bleeding, either major or clinically-relevant non-major bleeding (CRNMB), was significantly higher in the full-dose than reduced-dose group (RR=0.74; 95%CI: 0.63-0.89; p<0.001). There were no significant differences between the two groups in terms of death and adverse events.

Conclusion: This review suggests that reduced-dose apixaban can be used as

an alternative to full-dose apixaban for the extended treatment of VTE.
Moreover, the reduced-dose offers a better safety profile due to its lower risk of bleeding, particularly CRNMB.

Session Title: Saturday Poster Session

Topic 1: Cardiovascular Disease Prevention

Publishing Title: REMOTE MONITORING OF PATIENTS WITH ARTERIAL HYPERTENSION USING A CHATBOT IN A PERSONAL MESSENGER

Author Block: Anastasia Panova, Elena Zheleznykh, Nikolay Pavlov, [Maria Kozhevnikova](#), Yury Belenkov, Sechenov First Moscow State Medical University, Moscow, Russian Federation

Background: To evaluate the effectiveness of remote monitoring using a chatbot in a personal messenger for achieving target blood pressure (BP) in patients with arterial hypertension.

Methods: The study included 80 patients with hypertension: 40 in the remote monitoring (RM) group and 40 in the control group (standard outpatient monitoring at the place of residence). 3 (8%) patients dropped out of the RM group. 77 patients were analyzed. The groups were comparable for age (RM 68.00 [66.00 - 70.00] vs control 69.50 [66.75 - 73.00], $p=0.254$) and gender (men 16 (43%) vs 17 (43%), $p=0.948$). Remote monitoring using a chatbot in a personal messenger was conducted for 3 months after discharge from the hospital, where patients' therapy was selected or adjusted. The intervention in the RM group included correction of antihypertensive therapy (AHT) when target BP levels were not achieved (target systolic blood pressure (SBP) <140 mmHg, optimal SBP <130 mmHg). The achievement of target BP levels, correction of AHT, and adherence to data transmission via a chatbot were assessed. Adherence was calculated as a percentage using the ratio $A/C*100\%$, where A is the number of completed questionnaires and C is the number of submitted questionnaires.

Abstract Body:

Results: At the beginning of the observation, the average SBP in the RM group was 135.0 [130.0; 140.0] vs the control group 140.0 [130.0; 150.0], $p=0.23$. After 3 months, SBP significantly decreased in the RM group 124.0 [117.0; 131.0], $p<0.001$ and in the control group 130.0 [120.0; 140.0], $p=0.002$. The decrease in SBP in the RM group was lower ($p=0.002$). An increase in SBP above 140 mmHg was observed equally often in both groups (18 (49%) vs 18 (45%), $p=0.749$). Correction of AHT was performed in 15 (41%) of the RM group vs 4 (10%) of the control group, $p=0.003$. Adherence to remote monitoring was

greater than 50% in 34 (92%) patients.

Conclusion: SBP was lower in the RM group after 3 months than in the control group. The chatbot in the RM group demonstrated high patient engagement: most patients regularly transmitted data.

Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: PROGNOSTIC VALUE OF THE THREE-DIMENSIONAL LEFT ATRIOVENTRICULAR COUPLING INDEX FOR PREDICTING HEART-FAILURE HOSPITALIZATION AFTER ACUTE MYOCARDIAL INFARCTION

Author Block: Han Le Thi Ngoc, Hung Tran Duc, Thuc Luong Cong, Military Hospital 103, Ha Noi, Viet Nam

Abstract Body:

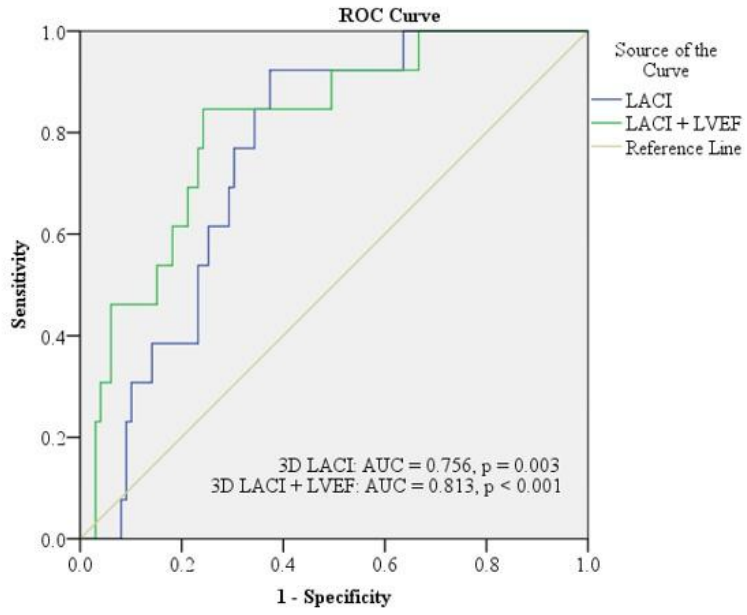
Background: Impaired atrioventricular coupling may promote adverse remodeling and heart-failure after acute myocardial infarction (AMI). The prognostic value of the three-dimensional left atrioventricular coupling index (3D LACI) in this setting remains unclear

Methods: In this prospective study, 120 patients with AMI undergoing percutaneous coronary intervention underwent three-dimensional echocardiography within 24 hours of admission. The 3D LACI was calculated as the ratio of left atrial to left ventricular end-diastolic volume. Patients were followed for 12 months for heart-failure hospitalization. Cox proportional hazards models and receiver-operating characteristic (ROC) analyses were used to assess prognostic performance

Results: The mean age was 66.5 ± 10.2 years; 76.7% were male. Heart-failure hospitalization occurred in 11.7% of patients. Those with events had higher 3D LACI values ($22.6 \pm 4.1\%$ vs. $18.7 \pm 7.5\%$; $p = 0.01$). The 3D LACI independently predicted heart-failure hospitalization (HR: 1.52; 95% CI: 1.02-2.27; $p = 0.038$). ROC analysis showed good discrimination (AUC: 0.756; $p = 0.003$), which improved when combined with LVEF (AUC: 0.813; $p < 0.001$). A cutoff of 23.5% identified higher-risk patients (log-rank χ^2 : 4.7; $p = 0.029$)

Conclusion: The three-dimensional left atrioventricular coupling index independently predicts heart-failure hospitalization after AMI. Integration with LVEF provides incremental prognostic value and may improve post-AMI risk

stratification



Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: IMPACT OF AMBIENT PM_{2.5} EXPOSURE ON IN-HOSPITAL MORTALITY IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND CARDIOGENIC SHOCK: EVIDENCE FROM ONE OF THE MOST POLLUTED CITIES IN THE WORLD

Author Block: Nuttanicha Phoksiri, Supaporn Limpaisarn, Tasalak Thonghong, Panupong Pota, Aekapat Phoksiri, Srun Kuanprasert, Pannipa Suwannasom, Maharaj Nakorn Chiang Mai Hospital, Chiangmai, Thailand

Background: Air pollution, particularly fine particulate matter (PM_{2.5}), is strongly associated with adverse cardiovascular outcomes. However, its impact on mortality among patients with acute myocardial infarction and cardiogenic shock (AMI-CS) remains poorly defined. Chiang Mai, Thailand, is consistently ranked among the most polluted cities globally, providing a unique setting to explore this relationship.

Methods: This single-center, cross-sectional study included AMI-CS patients who underwent percutaneous coronary intervention from July 2019 to June 2023. Patients were categorized into high-pollution (January-April) and low-pollution (May-December) periods using air quality index (AQI) data from the Smoke Haze Integrated Research Unit. Clinical, hemodynamic, and laboratory parameters were compared. The primary endpoint was in-hospital all-cause death, analyzed by logistic regression.

Abstract Body:

Results: Among the total cohort of 2,859 patients presenting with AMI, 229 were identified as having AMI-CS, with 80 patients (34.9%) and 149 patients (65.1%) presented during high-and low-pollution, respectively. Mean PM_{2.5} levels were 51.97 µg/m³ versus 14.43 µg/m³ (p<0.001). AMI-CS patients in high-pollution group had a higher in-hospital death than the low-pollution group (61.3% vs. 41.6%, p=0.005). The median duration of mechanical circulatory support (1,470 vs. 2,925 mins, p=0.01), and hospital stay (3 vs. 6 days, p=0.001) in the high-pollution group was shorter than the low-pollution group, reflecting early mortality. High PM_{2.5} exposure independently predicted in-hospital death (odds ratio 2.22, 95% confidence interval: 1.27-3.87; p = 0.005).

Conclusion: AMI-CS patients admitted during periods of elevated PM_{2.5} periods had a significantly increased risk of in-hospital death. These findings underscore the critical need for public health strategies to reduce air pollution and mitigate its cardiovascular impact, particularly in regions with recurrent seasonal haze.

Session Saturday Poster Session
Title:

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: PING- PONG TO PLUG: SEQUENTIAL LAD AND RV PERFORATION REPAIRED BY DUAL CATHETER RESCUE AND DEVICE CLOSURE

Author Anagh T. Shetru, KALYAN MUNDE, Grant Medical College and JJ group of
Block: Hospitals, MUMBAI, India

Background: During percutaneous coronary intervention(PCI) one complication led to another in the form of inadvertent right ventricle(RV) perforation, yet transcatheter interventions ultimately enabled successful management.

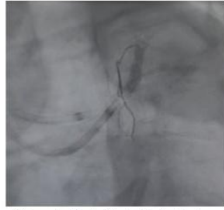
Case: 58 year old male during routine PCI developed perforation after balloon dilatation, which was successfully treated using a dual-catheter “ping-pong” technique and emergent pericardiocentesis. Despite initial drainage, pericardial effusion persisted on Day 2 and during repositioning of the pigtail catheter, resistance to the wire was noticed and angiography revealed inadvertent RV perforation with the wire and catheter entering the pulmonary artery.

Abstract
Body:

Decision-making: Given the high hemodynamic risk of acute RV free-wall perforation, emergent trans-catheter closure was undertaken. A pigtail catheter was positioned in the RV via right femoral vein and pericardial access re-established. A super stiff wire was advanced into a pulmonary artery branch, followed by deployment of a 6mm device through a 12F sheath. The device was deployed with one disk in the RV and the other in the pericardial space, confirmed on lateral view. After confirming no new effusion, residual fluid was drained.



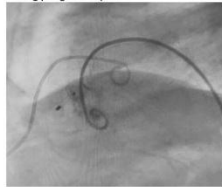
Index event



1st complication tackled by Dual catheter
"Ping pong technique"



2nd complication closed by VSD occluder device.



Device plugged in.

Conclusion: Coronary perforation requires rapid, coordinated management. This case also emphasizes the vigilance required during hospital stay, where patient movement led to sheath-induced RV perforation. Transcatheter closure offered a safe, minimally invasive solution.

Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: OPTIMISING INTERMEDIATE-RISK CHEST PAIN PATHWAYS: RESULTS FROM AN AUSTRALIAN RAPID ACCESS CHEST PAIN CLINIC

Author Block: Ruyi Zhang, [Chu Wen Lo](#), Richard Szirt, Glenn Ison, St George Hospital, Kogarah, Australia

Abstract Body:

Background: Rapid-access chest pain clinics (RACC) for patients presenting to the Emergency Department (ED) with chest pain reduce unnecessary admissions, but downstream cardiac imaging use and clinical outcomes after referral has not been well investigated in Australia.

Methods: We conducted a retrospective review of ED patients referred to the St George Hospital RACC between 1 June 2024 and 30 July 2025. CT coronary angiography (CTCA) and stress echocardiography utilisation, subsequent invasive angiography and percutaneous coronary intervention (PCI) were recorded.

Results: Of the 144 patients referred to RACC; 121 (84%) completed CTCA and severe coronary artery stenosis was reported in 31 (23%). 11 patients (9%) had stress echocardiography for functional assessment of moderate stenotic lesions on CTCA. Of the patients that had positive non-invasive imaging, 23 patients (18.9%) underwent coronary angiogram with 5 (4.1%) undergoing PCI. In the study period, 2 patients (1.3%) re-presented with chest pain and was admitted before their clinic review; none re-presented with myocardial infarction.

Conclusion: A CTCA-focused RACC model offers safe evaluation for intermediate-risk chest pain patients presenting to ED, with low rates of re-presentation, targeted use of functional testing, and appropriate referral for invasive angiography and PCI. These findings support RACC as a reliable alternative to inpatient assessment, optimising both resource use and patient outcomes.

Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: ACUTE ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION COMPLICATED BY RECURRENT CONTRAST-INDUCED KOUNIS SYNDROME

Author Block: Peiliang Fang, [Ao Shi](#), Jun Pu, Department of Cardiology, Renji Hospital, School of Medicine, Shanghai Jiao Tong University, Shanghai, People's Republic of China

Background: Kounis syndrome, an allergy-mediated acute coronary syndrome, is an under-recognised cause of abrupt coronary “occlusion” during primary PCI for STEMI. We describe contrast-induced Kounis syndrome repeatedly mimicking acute thrombotic occlusion during PCI.

Case: A 76-year-old male with prior coronary stents and hypertension presented with inferior STEMI and underwent staged PCI of the left coronary system. During PCI for a distal circumflex lesion, he developed sudden hypotension and apparent angiographic occlusion of the circumflex ostium immediately after contrast injection.

Decision-making: Coronary flow was restored with aspiration thrombectomy, intracoronary tirofiban and vasodilators, allowing successful circumflex stenting. One month later, during repeat left coronary angiography prior to planned LAD PCI, he developed chest pain again, profound hypotension, cardiac arrest and loss of opacification of both the LAD and circumflex shortly after contrast administration. During cardiopulmonary resuscitation, intracoronary vasodilators, adrenaline and aspiration re-established flow, permitting LAD stenting. A transient generalised rash, markedly elevated total IgE (753 IU/mL) with negative drug-specific IgE, and the tight temporal relationship to iodinated contrast supported a diagnosis of type II Kounis syndrome on a background of multi-vessel coronary artery disease.

Abstract Body: **Conclusion:** This case highlights that contrast allergy-mediated coronary spasm is a reversible and treatable cause of intraprocedural hemodynamic collapse that can closely mimic acute thrombotic occlusion. Early recognition, prompt anti-allergic therapy, and, when systemic resuscitation alone is insufficient, simultaneous intracoronary vasodilator/aspiration therapy with continued revascularisation may be lifesaving.

Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: PROGNOSTIC VALUE OF IABP-SHOCK II SCORE IN ACUTE MYOCARDIAL INFARCTION WITH CARDIOGENIC SHOCK TO GUIDE INTRA-AORTIC BALLOON PUMP USE IN RESOURCE-LIMITED SETTING

Author Block: supaporn Limpaisarn, Nuttanicha Phoksiri, Tasalak Thonghong, Panupong Pota, Aekapat Phoksiri, Srun Kuanpasert, Pannipa Suwannsom, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand

Abstract Body:

Background: In acute myocardial infarction with cardiogenic shock (AMI-CS), short-term mechanical circulatory support (MCS) can be lifesaving. In low- to middle-income Asian countries where advanced MCS devices are limited, the intra-aortic balloon pump (IABP) remains the most accessible option. A validated risk stratification tool, the IABP-SHOCK II score, may support appropriate patient selection and resource utilization. We sought to evaluate the prognostic performance of the IABP-SHOCK II score for short-term survival and identify subgroups of AMI-CS patients who may benefit from IABP therapy in resource-limited setting.

Methods: This is a single-center registry study including consecutive AMI-CS patients undergoing percutaneous coronary intervention (PCI) between 2020 and 2023. CS was defined per IABP-SHOCK II criteria. Scores were calculated for each patient, and their ability to predict benefit from IABP was evaluated using receiver operating characteristic (ROC) curves.

Results: Among 2,859 AMI patients, 229 (8.0%) presented with CS. After excluding cases with incomplete data, 99 patients were analyzed (mean age 66.9 ± 11.1 years, 59.6% male). Over half of them (57.6%) presented in SCAI shock stage E. Based on IABP-SHOCK II score, 49.5%, 36.4%, and 14.1% were classified as low, intermediate, and high-risk. Notably, one-fourth of low-risk patients presented with advance shock (stage E). IABP was used in 55 patients (55.6%), of whom 24 survived. The IABP-SHOCK II score showed good discrimination for identifying patients likely to benefit from IABP (AUC 0.79; 95% CI 0.61-0.88). The optimal cut-off score for considering IABP was 2.5 (Youden's index 0.41, sensitivity 0.67, specificity 0.74), with intermediate-risk patients showing the greatest benefit.

Conclusion: In resource-constrained settings, the IABP-SHOCK II score may guide optimal selection of AMI-CS patients for IABP therapy, with the strongest benefit observed in intermediate-risk patients.

Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: SYSTEMIC IMMUNE-INFLAMMATION INDEX PREDICTS THE RISK OF CONTRAST-INDUCED ACUTE KIDNEY INJURY IN STEMI PATIENTS WITH TYPE 2 DIABETES MELLITUS UNDERGOING PRIMARY PERCUTANEOUS CORONARY INTERVENTION

Author Block: Ivan Bokovikov, Konstantin Protasov, Elena Batunova, Irkutsk State Medical Academy of Postgraduate Education, Irkutsk, Russian Federation, Irkutsk City Clinical Hospital No.1, Irkutsk

Background: Contrast-induced acute kidney injury (CI-AKI) occurs in 10-30% of patients with ST-segment elevation myocardial infarction (STEMI) and substantially worsens outcomes. Although the predictive value of the neutrophil-to-lymphocyte ratio (NLR) for CI-AKI has been shown, the performance of emerging cellular indices of systemic inflammation in STEMI with type 2 diabetes mellitus (T2DM) has not been evaluated. **Aim** To assess the prognostic significance of the systemic immune-inflammation index (SII), systemic inflammatory response index (SIRI), and aggregate index of systemic inflammation (AISI) for CI-AKI in STEMI with T2DM.

Abstract Body: **Methods:** This retrospective cohort study included 246 consecutive patients with STEMI and T2DM undergoing primary PCI from July 2023 to December 2024. CI-AKI was defined as a serum creatinine increase of 0.3 mg/dL or $\geq 50\%$ within 48-72 h after contrast administration. Pre-PCI blood counts were used to calculate SII (neutrophils \times platelets/lymphocytes), SIRI (neutrophils \times monocytes/lymphocytes), AISI (neutrophils \times monocytes \times platelets/lymphocytes) and NLR. Associations with CI-AKI were analysed using logistic regression.

Results: CI-AKI occurred in 32 patients (13.0%). In univariate models, CI-AKI was associated with NLR (odds ratio 1.15, 95% confidence interval 1.04-1.27; $p=0.008$), SII (1.07, 1.03-1.12; $p=0.002$), SIRI (1.11, 1.03-1.19; $p=0.006$) and AISI (1.05, 1.02-1.09; $p=0.001$). In the multivariable model adjusted for sex, age, body weight, neutrophil count, NLR and established CI-AKI predictors (serum creatinine, number of implanted stents, acute heart failure), only SII remained independently associated with CI-AKI (1.06 per 100-unit increase, 1.01-1.13;

p=0.036).

Conclusion: SII was found to be an independent predictor of CI-AKI following primary PCI in patients with STEMI and T2DM.

Session Title: Saturday Poster Session

Topic 1: Coronary Interventions and Ischemic Heart Diseases

Publishing Title: TRENDS IN MORTALITY DUE TO ENDOCARDITIS: A 32-YEAR CROSS-SECTIONAL STUDY

Author Block: Shree Rath, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, India

Abstract Body:

Background: Endocarditis remains one of the most serious cardiac diseases, often leading to significant morbidity and mortality worldwide.

Methods: Global and regional trends were examined using Average Annual Percentage Change (AAPC) and corresponding 95% Confidence Intervals (CI). Regions were categorized into SDI groups (High-SDI, High-Middle-SDI, Middle-SDI, Low-Middle-SDI, and Low-SDI) to explore socioeconomic disparities.

Results: Globally, trends indicated a rise in mortality (AAPC: 0.64; 95%CI: 0.43, 0.85), with a significantly steeper rise among females (AAPC: 0.73; 95%CI: 0.45, 1.0) than males (AAPC: 0.54; 95%CI: 0.41, 0.68). Steepest rise was noted in high SDI regions (AAPC: 1.5; 95%CI: 1.22, 1.78), with a sharper rise among males (AAPC: 1.6; 95%CI: 1.42, 1.78) than females (AAPC: 1.47; 95%CI: 1.12, 1.81). HM-SDI regions also noted a significantly rising trend (1.31%), with rates in females (1.59%) higher than in males (0.96%). Other regions as in M-SDI, LM-SDI and L-SDI noted declining trends, with highest decline noted in L-SDI regions (-0.47%; 95%CI: -0.54, -0.4), both across males (-0.43%; 95%CI: -0.51, -0.35) and females (-0.45%; 95%CI: -0.53, -0.37). All regions uniformly noted higher increases or lower decreases among females, except H-SDI and L-SDI regions, wherein females had a slower incline and a steeper decline respectively.

Conclusion: Trends indicated a rising mortality due to endocarditis, particularly among high-SDI regions. Females generally noted a steeper incline or a slower fall, indicating higher burden of the disease and increased mortality. However, in high-SDI regions, males noted a significantly sharper incline, indicating poorer prognosis following diagnosis and treatment. The rising trends in higher SDI regions may be due to the increasing prevalence of infective endocarditis or other autoimmune-related cardiac diseases. The declining trend in L-SDI regions may indicate earlier diagnosis, lesser burden of

autoimmune conditions, and effective treatment administration of identified cases. Further elucidation of trends in H-SDI regions is needed to characterize risk factors leading to the higher mortality.

Session Title: Saturday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: BEDSIDE DIAGNOSIS AND MANAGEMENT OF OBESITY HEART FAILURE WITH POINT OF CARE ULTRASOUND

Author Block: Joni Aoki, Rees Checketts, Libo Wang, [Lillian Lei Ching Khor](#), Veteran Affairs Medical center, Salt Lake City, UT, USA, University of Utah, Salt Lake City, UT, USA

Abstract Body:

Background: Accurate central venous pressure (CVP) assessment is critical for diagnosis and management of suspected heart failure (HF). Point-of-care ultrasound (POCUS) of the JVP (uJVP) is a novel tool with the potential to improve bedside CVP assessment.

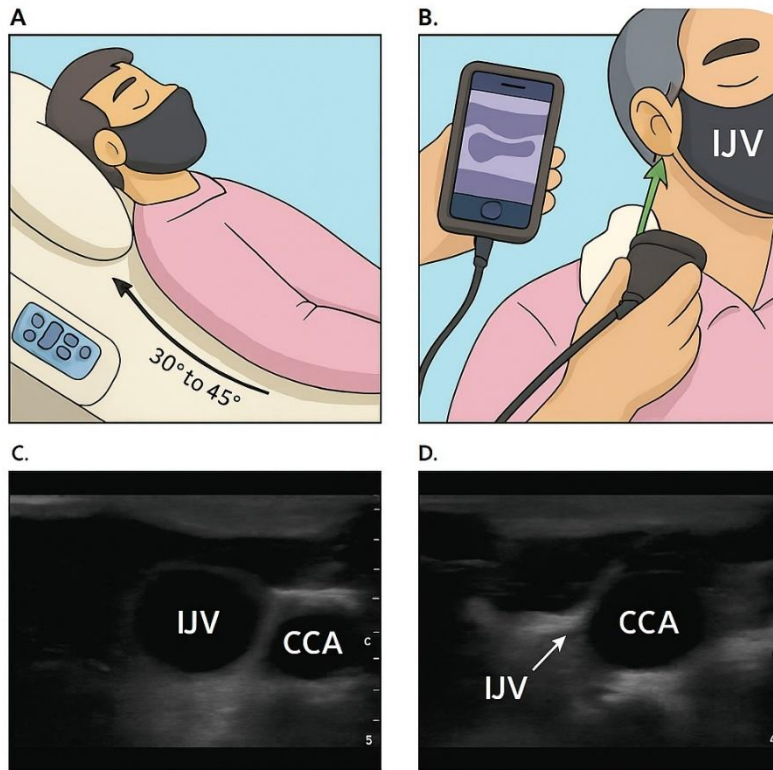
Case: We report on a 60-year-old male with preserved ejection fraction of 64%, Sjogren's syndrome, obstructive sleep apnea, and BMI of 49 kg/m² admitted following right heart catheterization (RHC) for dyspnea. His vJVP was unassessable, but uJVP elevation to the mandible was concordant with RAP of 17 mmhg by RHC. Echocardiogram discordantly suggested normal bi-atrial pressures. He was diuresed >15 lbs and discharged based on vJVP and symptom improvement. Post discharge, persistent dyspnea and elevated uJVP prompted uptitration of diuretics until limited by polyuria and despite addition of Glucagon-like peptide-1 receptor agonist therapy (GLP-RA), he required readmission. The second admission's diuresis was guided by symptom improvement and serial uJVP exam. At uJVP height <2 cm from the sternal angle, repeat RHC confirmed euvolemia with RAP of 7 mmhg at BMI of 42 kg/m².

Decision-making: The patient's uJVP exam correlated better with RAP by RHC than echocardiogram and serial uJVP exam guided diuresis. uJVP Exam technique is displayed:

Conclusion: This case illustrates the value of POCUS in enhancing bedside recognition of hypervolemia in obesity HF and guiding diuretic therapy towards

euvolemia when echocardiography was otherwise non-diagnostic.

Figure 1. Demonstration of the uJVP technique.



CCA = common carotid artery, IJV = internal jugular vein; uJVP = ultrasound jugular venous pressure.

A. The patient is reclined with the head of bed at 30° to 45°. **B.** The linear (or “vascular”) ultrasound probe (setting) is used. Probe orientation is in parallel to the floor and in transverse orientation to the CCA and IJV. Starting at the base of the neck above the clavicle, the probe is moved from caudal to cranial, tracking the IJV.

C. Demonstration of a dilated IJV adjacent to the CCA. **D.** A collapsed IJV, where the IJV is both smaller than the adjacent CCA and at its smallest point across the respiratory cycle.

Session Title: Saturday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: SGLT2 INHIBITORS AND CARDIOVASCULAR EVENT REDUCTION IN HFPEF: A SYSTEMATIC REVIEW & META-ANALYSIS

Author Block: Mohammad Eisa Ali, [Song Kwan Kim](#), Asaad Hussien, Venkata Kanishk Yannakula, Maleeha Pandit, Pinhas Harel, George Alan Kadungamparambil, Motassam Ali, University of Pavia, Pavia, Italy

Background: Heart failure with preserved ejection fraction (HFpEF) accounts for a large and growing proportion of heart failure and is associated with high morbidity and mortality, yet few therapies provide robust outcome benefit. Sodium-glucose cotransporter-2 (SGLT2) inhibitors have emerged as a potential disease-modifying treatment, but the magnitude and consistency of benefit in HFpEF remain incompletely defined.

Methods: We performed a systematic review and meta-analysis of randomized controlled trials evaluating SGLT2 inhibitors versus placebo or standard care in adults with HFpEF (left ventricular ejection fraction $\geq 50\%$). PubMed, Embase, Cochrane CENTRAL and major trial registries were searched through October 2024. Pooled risk ratios (RR) and 95% confidence intervals (CI) were calculated for major adverse cardiovascular events (MACE), heart failure hospitalization and cardiovascular mortality.

Results: Fifteen trials including 12,436 participants met inclusion criteria. Compared with control, SGLT2 inhibitors reduced MACE (RR 0.79, 95% CI 0.70-0.89) and heart failure hospitalization (RR 0.72, 95% CI 0.65-0.87). Cardiovascular mortality was also lower with SGLT2 inhibition (RR 0.84, 95% CI 0.75-0.95). In studies reporting patient-reported outcomes, SGLT2 inhibitors improved Kansas City Cardiomyopathy Questionnaire scores by approximately 3-5 points versus placebo, exceeding established thresholds for clinical significance.

Conclusion: In patients with HFpEF, SGLT2 inhibitors provide consistent reductions in MACE, heart failure hospitalization and cardiovascular death, together with clinically meaningful improvements in quality of life. These findings support routine incorporation of SGLT2 inhibitors into guideline-

Abstract Body:

directed therapy for HFpEF, including in Asia-Pacific practice settings where the burden of HFpEF is rapidly increasing.

Session Title: Saturday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: COMPARISON OF OUTCOMES BETWEEN LEFT BUNDLE BRANCH AREA PACING AND RIGHT VENTRICULAR PACING IN PATIENTS RECEIVING PACEMAKER THERAPY

Author Block: Rakavi R, rakesh yadav, Sourabh Agstam, Sumit Kumar, Satyavir Yadav, ALL INDIA INSTITUTE OF MEDICAL SCIENCES, NEW DELHI, India

Background: Right ventricular pacing (RVP) is the conventional pacing strategy used but it causes ventricular dyssynchrony leading to pacing induced cardiomyopathy and heart failure. Left bundle branch area pacing (LBBAP) is a physiological pacing method which preserves ventricular synchrony and hence reduces the risk of dyssynchrony and its complications. There is limited data comparing the two pacing methods in patients with normal Left ventricular ejection fraction (LVEF).

Methods: This was a prospective observational study in a tertiary care center in India. We enrolled 17 LBBAP patients and 30 RVP patient who were age and sex matched. All participants had baseline normal LVEF more than 50%. The primary outcome was to measure the change in Global longitudinal strain (GLS) between baseline and 6 months follow up. The secondary outcomes were change in LVEF, Left Ventricular End Diastolic Diameter (LVEDD), QRS duration, diastolic function (E/e' ratio)

Abstract Body:

Results: The mean age of the subjects was 68 ± 4 years and in both groups majority of the patients had ventricular pacing requirement more than 40%. In 6 months the change in GLS (delta GLS) was worse in RVP group when compared to LBBAP (RVP: $-4.5\% \pm -1.4\%$ vs. LBBAP: $-1.2\% \pm -0.6\%$ ($p=0.01$)). There was a significant increase in LVEDD in RVP over 6 months (RVP: $+12 \pm 3\text{mm}$ vs. LBBAP: $+4 \pm 3\text{mm}$, $p=0.03$) indicating early ventricular remodelling. There was significant increase in E/e' ratio in RVP (RVP: $+4.5 \pm 1.1$ vs. LBBAP: $+1 \pm 0.1$; $p=0.04$) indicating progressive diastolic dysfunction in RVP. LVEF and symptoms remained stable in both the groups. The procedure time and fluoroscopy time was significantly longer in LBBAP ($p<0.001$). The safety profile was comparable with no major difference in complications

Conclusion: These findings suggest that LBBAP performed better than RVP in

preserving left ventricular function and synchrony, as shown by improved GLS and E/e' ratio in 6 months. The safety profile was comparable to RVP. To provide stronger evidence, more prospective randomized trials are needed especially in those with normal LVEF.

Session Title: Saturday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: LEFT VENTRICULAR SYSTOLIC DYSFUNCTION IN MYOCARDIAL INFARCTION AND TYPE 2 DIABETES MELLITUS: ROLE OF CELLULAR INDICES OF SYSTEMIC INFLAMMATION

Author Block: Ivan Bokovikov, Konstantin Protasov, Elena Batunova, Irkutsk State Medical Academy of Postgraduate Education, Irkutsk, Russian Federation, Irkutsk City Clinical Hospital No.1, Irkutsk, Russian Federation

Abstract Body:

Background: The prognostic role of hematological biomarkers of the proinflammatory response in the development of left ventricular (LV) systolic dysfunction in patients with MI and DM 2 is poorly understood. **Aim of the study.** To identify the most informative cellular indices of systemic inflammation (CISI) associated with left ventricular systolic dysfunction (LVSD) in patients with ST-segment elevation myocardial infarction (STEMI) and type 2 diabetes mellitus (T2DM).

Methods: This study included 132 consecutive patients diagnosed with STEMI and T2DM. LVSD was defined as newly diagnosed reduction in left ventricular ejection fraction (LVEF) to $\leq 40\%$. On the third day of hospitalization, all patients underwent a complete blood count, based on which the following CISI were calculated: neutrophil-to-lymphocyte ratio (NLR), neutrophil-to-monocyte ratio, neutrophil-to-platelet ratio (NPR), platelet-to-lymphocyte ratio, monocyte-to-lymphocyte ratio (MLR), pan-immune-inflammation value (PIV), as well as the systemic immune-inflammation index (SII) and the systemic inflammation response index (SIRI). Associations between the inflammatory indices and LVSD were evaluated using logistic regression analysis. Receiver operating characteristic analysis was also performed.

Results: LVSD was observed in 39 (29.5%) patients. In univariate logistic regression analysis, the presence of LVSD was significantly associated with elevated NLR (odds ratio [OR] 1.32; 95% confidence interval [CI] 1.1-1.59; $p=0.003$), MLR (OR 8.62; 95% CI 1.52-49.1; $p=0.015$), PIV (OR 1.001; 95% CI 1.00-1.001; $p=0.014$), SII (OR 1.001; 95% CI 1.00-1.001; $p=0.030$), and SIRI (OR 1.18; 95% CI 1.03-1.35; $p=0.019$). In the fully adjusted multivariate regression model, only NLR remained independently associated with the development of

LVSD (OR 1.22; 95% CI 1.05-1.22; $p=0.011$). At a threshold value of NLR ≥ 3.11 , the likelihood of LVSD developing increased 3.25-fold (95% CI 1.49-7.08; $p=0.003$).

Conclusion: The neutrophil-to-lymphocyte ratio, measured 48 hours after hospital admission, is an independent marker of LVSD in patients with STEMI and T2DM.

Session
Title: Saturday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing
Title: CARDIAC MAGNETIC RESONANCE IMAGING-BASED PREDICTION OF PATHOGENIC VARIANTS IN NON-ISCHEMIC DILATED CARDIOMYOPATHY

Author Jooyeon Lee, Jaewon Oh, Yoo Jin Hong, Chan Joo Lee, Young Jin Kim, Seok-Min Kang, Yonsei University College of Medicine, Seoul, South Korea
Block:

Background: Pathogenic or likely pathogenic (P/LP) variants are increasingly recognized in patients with nonischemic dilated cardiomyopathy (NIDCM), whereas the role of cardiac magnetic resonance (CMR) with myocardial tissue characterization in predicting genotype positivity remains undefined.

Methods: A total of 324 patients (median age 55 years, 63.6% male) with NIDCM and left ventricular ejection fraction (LVEF) <50% were retrospectively enrolled between 2017 and 2024 from a single tertiary center. All patients underwent CMR and targeted next-generation sequencing of 36-gene DCM-related panel. Genotype positivity was defined as the presence of P/LP variants. Clinical and CMR characteristics were compared by genotype status, and independent predictors of genotype positivity were identified using multivariable logistic regression incorporating CMR-derived tissue characteristics.

Abstract
Body:

Results: P/LP variants were identified in 15.7% (n=51). Variant-positive patients were younger (52 vs. 55 years) and more frequently reported a family history of heart failure (21.6% vs. 10.3%) compared with gene-elusive group. The prevalence of hypertension (17.6% vs. 45.4%) and other comorbidities was lower, whereas nonsustained ventricular tachycardia was more commonly observed (16.0% vs. 6.2%). Atrial fibrillation and baseline LVEF did not differ between groups. CMR showed comparable LV end-diastolic volume index (138.8 vs. 140.9 mL/m²), while extracellular volume fraction (ECV) was modestly higher in variant-positive patients (30.9% vs. 28.9%, p=0.034), and native T1, T2, and extent of quantified late gadolinium enhancement were similar. In multivariable analysis, lower systolic blood pressure (per 10 mmHg, OR 0.67; 95% CI 0.53-0.85; p=0.001), QRS duration >120 ms (OR 0.30; 95% CI 0.11-0.80; p=0.016), and higher ECV (OR 1.09; 95% CI 1.00-1.19; p=0.043) were independently associated with genotype positivity.

Conclusion: CMR-based phenotyping, including ECV, may facilitate the identification of pathogenic genetic variants in patients with NIDCM.

Session Title: Saturday Poster Session

Topic 1: Heart Failure and Cardiomyopathies

Publishing Title: COMPARATIVE EFFECTIVENESS OF FLUID, SODIUM, AND COMBINED RESTRICTION FOR VOLUME MANAGEMENT IN HEART FAILURE PATIENTS: A BAYESIAN NETWORK META-ANALYSIS OF RANDOMIZED CONTROL TRIALS

Author Block: Michael Owen Hogipranata, Derren Rampengan, Muhammad Reva Aditya, Rahmatillah Nugraha, Imanuel Yuerrico Subianto, Arga Setyo, Virginie Trias Salim, Karisya Juwita Puteri, Victor Joseph, Ade Meidian Ambari, Faculty of Medicine, Brawijaya University, Malang, Indonesia

Background: Heart failure affects more than 64 million people worldwide, but the benefit of sodium or fluid restriction remains unclear. Leading guidelines by the American College of Cardiology, the American Heart Association, and the Korean Society of Heart Failure acknowledge limited evidence, and previous meta-analyses have been constrained by pairwise designs and narrow outcome assessment.

Methods: Bayesian network meta-analysis was performed following PRISMA guidelines, using five databases; PubMed, ScienceDirect, Epistemonikos, Cochrane Library and Google Scholar. Treatment ranking was determined using SUCRA analysis. All analyses were performed using the Metalnsight platform version 6.4.0. and model convergence was evaluated using the Gelman-Rubin diagnostic.

Abstract Body: **Results:** Twenty-three studies comprising 2,939 adults with heart failure were included. Compared with liberal intake, fluid restriction was associated with lower serum creatinine (MD -0.256 mg/dL, 95% CI -0.281 to -0.231; $p < 0.0001$), higher serum sodium (MD +5.53 mmol/L, 95% CI 5.38-5.69; $p < 0.0001$), lower BNP (MD -271 pg/mL, 95% CI -529 to -47.1; $p = 0.018$), greater weight reduction (MD -1.89 kg, 95% CI -4.06 to -0.165; $p = 0.034$), lower diastolic BP (MD -13 mmHg, 95% CI -17.9 to -8.62; $p < 0.0001$), and lower heart rate (MD -18.5 bpm, 95% CI -25.9 to -11.1; $p < 0.0001$). It also showed a borderline reduction in all-cause mortality (RR 0.35, 95% CI 0.103-1.04; $p = 0.059$) and lower all-cause hospitalization (RR 0.622, 95% CI 0.34-1.17; $p = 0.023$). Conversely, sodium restriction was linked to higher creatinine (MD +0.265 mg/dL, 95% CI 0.246-0.284; $p < 0.0001$), weight gain (MD +1.47 kg,

95% CI 0.195-3.05; $p=0.027$), and higher mortality (RR 1.74, 95% CI 0.965-2.65; $p=0.066$). Combined fluid + sodium restriction showed no significant advantage. Ranking analyses favored fluid restriction across most outcomes.

Conclusion: Fluid restriction showed the most favorable physiologic and clinical profile, outperforming sodium and combined restriction. Signals of harm with sodium restriction warrant caution, and volume management should be individualized to patient status and comorbidities.

Session Title: Saturday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: MULTI-SEQUENCE CARDIAC MRI TISSUE CHARACTERISATION OF CARDIAC MASSES: A RETROSPECTIVE COHORT STUDY

Author Block: Aineesh Vallurupalli, Ramiah Rajesh Kannan, Rajesh Thachathodiyl, Pranavi Veerapaneni, Amrita institute of medical sciences, Kochi, India

Background: Cardiac masses span benign tumours, malignant neoplasms and pseudotumours. Accurate characterisation guides management, yet echocardiography alone may not distinguish these entities. Cardiac magnetic resonance (CMR) integrates cine imaging, native T_1/T_2 mapping, perfusion and late gadolinium enhancement (LGE) to non-invasively characterise tissue.

Methods: We retrospectively analysed 120 consecutive patients (mean age 52.8 ± 18.2 years; 52.5 % female) who underwent CMR for suspected cardiac masses between January 2019 and December 2024. The protocol comprised cine imaging, native T_1/T_2 mapping, perfusion and LGE sequences. Lesions were classified as benign, malignant, or pseudotumour (thrombus/cyst) based on histopathology or follow-up, and categorical variables were compared between groups using the chi-square test.

Abstract Body: **Results:** Benign tumours comprised 43.3 % of masses, thrombi 17.5 % and malignant lesions 27.5 %; myxomas ($n = 27$) were the commonest. CMR signatures differed significantly across lesion types. Myxomas showed elevated native T_1/T_2 and heterogeneous LGE ($p \leq 0.015$). Benign fibromas generally demonstrated normal native T_1 , low T_2 and homogeneous LGE, while lipomas showed low native T_1 , high T_2 values and no LGE, whereas thrombi demonstrated low native T_1/T_2 with no LGE ($p = 0.008-0.001$). Cysts displayed high native T_1/T_2 without enhancement ($p = 0.004-0.018$). Malignant masses, including angiosarcomas and metastases, exhibited high native T_1/T_2 and heterogeneous LGE ($p = 0.001-0.042$).

Conclusion: Multiparametric CMR enables accurate, non-invasive differentiation of cardiac masses through combined assessment of morphology, mapping, perfusion and enhancement. Significant differences in native T_1/T_2 values and LGE patterns across lesions—especially low values

with no enhancement in thrombi and elevated values with heterogeneous enhancement in myxomas and malignant masses—underscore the diagnostic power of CMR. These findings reinforce CMR as the reference standard for cardiac mass evaluation and emphasize its role in guiding treatment and avoiding unnecessary biopsy.

Session Title: Saturday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: MULTIMODALITY IMAGING IN SUSPECTED CARDIAC MALIGNANCY: THE CRUCIAL ROLE OF CONSIDERING TUBERCULOSIS IN ENDEMIC REGIONS

Author Block: Farooque Aziz, Wajid Hussain, SR, Samir Rehman, naveed ishaq, Sidra Fayyaz, Mohammad Omer Khan, Mahesh Kumar Batra, suhaib kushk, Sabha Bhatti, National institute of cardiovascular disease, karachi, Pakistan

Abstract Body: **Background:** Pericardial tuberculoma is a rare manifestation of tuberculosis that can closely resemble malignancy making timely diagnosis challenging. **Case:** A 28 year old man with prior pulmonary tuberculosis presented with dyspnea, abdominal distension, cough, and pedal edema. Examination revealed elevated jugular venous pressure, tender hepatomegaly and muffled heart sounds. Transthoracic echocardiography (TTE) showed pericardial thickening with constrictive physiology, loculated effusion and an echogenic pericardial mass. Computerized topography (CT) demonstrated a pericardial lesion with mediastinal lymphadenopathy. Cardiac magnetic resonance (CMR) revealed a rim-enhancing mass with a non-enhancing necrotic core, consistent with a tuberculoma and without myocardial invasion.

Decision-making: TTE identified constriction but lacked tissue characterization; CT defined morphology but remained nonspecific; and CMR demonstrated granulomatous inflammation typical of tuberculous pericarditis. The patient underwent pericardiectomy, and histopathology confirmed caseating granulomas. Anti-tuberculous therapy was initiated.

Conclusion: At one month follow up symptoms improved significantly. Tuberculous pericardial disease should be strongly considered in mass-like pericardial lesions with constrictive physiology, particularly in TB-endemic regions. A step ladder multimodality imaging strategy is essential for accurate diagnosis and optimal management.

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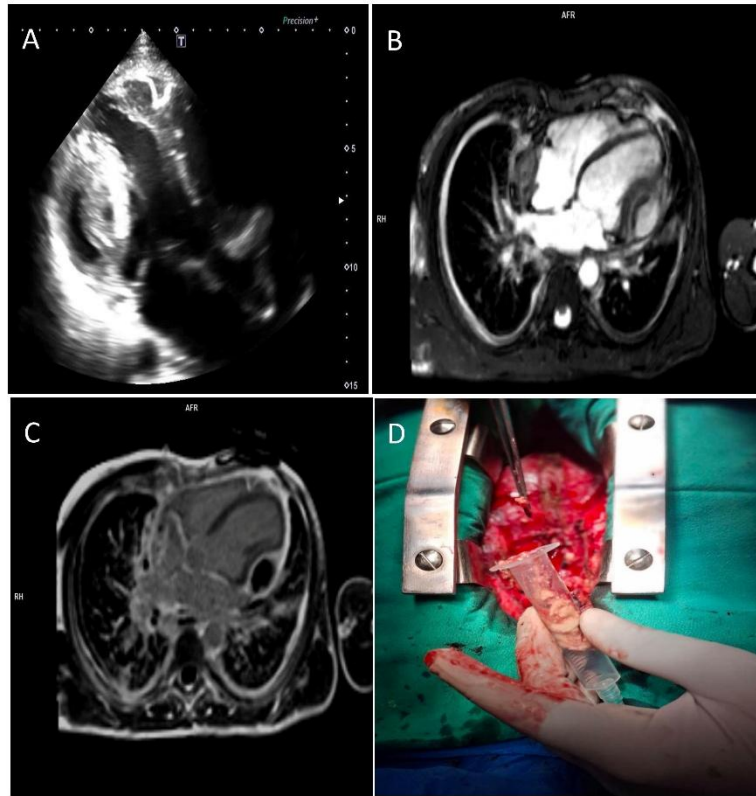


Figure 1 (A): Echo apical 3 chamber view with pericardial mass compressing LV. **Figure 2 (B):** CMR showing indentation of LV free wall without myocardial invasion. **Figure 3 (C):** CMR LGE with peripheral rim enhancement and non-enhancing central core. **Figure 4 (D):** Intraoperative white caseous material extraction.

Session Title: Saturday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: POST AVR DYSPNEA - A CASE OF LV OUTFLOW TRACT ANEURYSM WITH LVOT-PA FISTULA

Author Block: ARGHADIP BOSE, Neelam Dahiya, Rupesh Kumar, Arun Sharma, Postgraduate Institute of Medical Education and Research, Chandigarh, India

Abstract Body:

Background: A 43-year-old female underwent AVR (SJM mechanical valve 23#mm) in 2019 for severe rheumatic AR.

Case: After 4 years, she presented with complaint of exertional dyspnea for the last 3-4 months. Physical examination was unremarkable. Echocardiography revealed a large LVOT aneurysm of size 3.2x3.8 cm, prolapsing into the left atrium with left ventricular inflow obstruction, a normally functioning prosthetic aortic valve, and normal LV systolic function with LVEF~60%. The LVOT aneurysm had a fistulous connection with the pulmonary artery, and she had mild TR with mild PAH (RVSP = RAP + 39 mmHg). Cardiac CT revealed a large multilobulated pseudoaneurysm from the LVOT measuring 4.3x4.4cm, prolapsing into the left atrium with left atrial inflow obstruction. CT also revealed the presence of a small fistulous communication with the main pulmonary artery (LVOT-MPA fistula).

Decision-making: The patient was advised for LVOT aneurysmal intracardiac repair surgery with surgical closure of the fistulous pathway under high-risk. But she refused to undergo repeat open heart surgery, and she has been advised to undergo close cardiology follow-up.

Conclusion: Fistulous communications from LVOT to surrounding structures can present late after aortic valve surgeries as unexplained dyspnea. Careful echocardiographic evaluation helps to promptly identify such communications. Multi-modality imaging is needed to define the anatomy and

strategize management in such cases.



Session Title: Saturday Poster Session

Topic 1: Multimodal Imaging

Publishing Title: WHEN TTE ISN'T THE END: A MULTIMODAL JOURNEY THROUGH PERICARDIAL PATHOLOGY

Author Block: Paisit Kosum, Chalinee Pravarnpat, Kantheera Leesmidt, Apichaya Sripariwuth, Kanthachat Thatsakorn, Pongpun Jittham, Nattakorn Songsirisuk, Akenarong Pipatputthapong, Naresuan University, Phitsanulok, Thailand

Abstract Body:

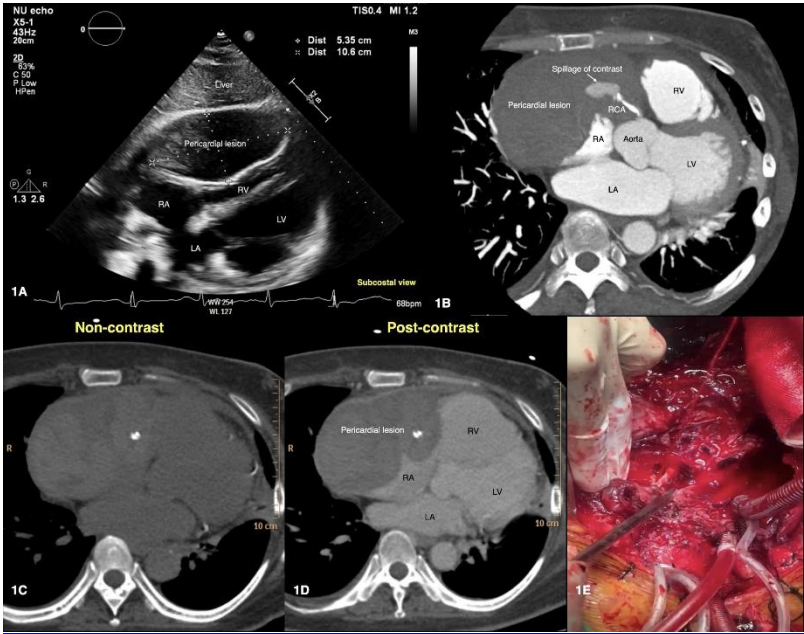
Background: Spontaneous coronary artery rupture (SCAR) is a rare but life-threatening condition, often presenting with tamponade. Diagnosis is challenging, especially in patients with complex comorbidities.

Case: A 41-year-old Thai woman with ESRD, T2D, HTN, dyslipidemia, and prior right-sided infective endocarditis presented for evaluation after completing antibiotics. Initial TTE showed no residual vegetation but revealed a new large pericardial mass compressing the right atrium and ventricle. CMR demonstrated a rim-enhancing, mixed-stage hematoma with constrictive physiology, while CT angiography showed active contrast spillage from the proximal RCA coursing through the lesion, consistent with coronary rupture. Surgical exploration confirmed RCA rupture with active bleeding and a massive subepicardial hematoma. The vessel was repaired and clot evacuated.

Decision-making: This case highlights the pivotal role of multimodality imaging in characterizing an unusual pericardial lesion, differentiating hematoma from mass or abscess. SCAR is exceedingly rare outside of trauma or intervention. In this patient, chronic comorbidities and prior infection may have contributed to vessel fragility. Timely recognition prevented progression to tamponade or cardiogenic shock.

Conclusion: Spontaneous RCA rupture causing subepicardial hematoma is rare and often fatal. A multimodal imaging strategy was essential for diagnosis,

surgical planning, and lifesaving intervention.



Session Title: Saturday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: THE CLOT, THE FILTER, AND THE ULCER: A HIGH-STAKES BALANCING ACT OF RECURRENT IVC SYNDROME IN ULCERATIVE COLITIS

Author Block: Rutvik Raval, Shamitha Hejmadi, Kamal Sharma, B. J. Medical College, Ahmedabad, India, U.N. Mehta Institute of Cardiology, Ahmedabad, India

Background: Ulcerative Colitis (UC) confers a hypercoagulable state, significantly elevating the risk of Venous Thromboembolism (VTE). Management becomes critically complex when patients require Inferior Vena Cava (IVC) filters due to bleeding contraindications, as these devices carry their own risk of thrombotic occlusion.

Case: A 33-year-old male with an 8-year history of UC presented with fever, severe back pain, and bilateral thigh swelling. His complex history included recurrent Pulmonary Embolism (PE) and Deep Vein Thrombosis (DVT), necessitating IVC filter placement after melena precluded anticoagulation. He had previously required Catheter-Directed Thrombolysis (CDT) for IVC syndrome. Following a recent recurrent gastrointestinal bleed and subsequent discontinuation of anticoagulants, he presented with "Acute IVC Syndrome".

Abstract Body: Central venography revealed massive thrombosis involving both common iliac veins extending into the IVC, with complete occlusion at the filter site.

Decision-making: The patient faced a therapeutic deadlock: massive, limb-threatening thrombosis versus a high risk of hemorrhage from active UC. Systemic thrombolysis was deemed unsafe due to the recent bleeding ulcer. A multidisciplinary team elected for a targeted endovascular approach to balance hemostasis and patency. Mechanical thrombosuction was performed using a 6 French catheter, successfully aspirating multiple clots. This was followed by localized CDT with Alteplase via a pigtail catheter to dissolve the residual thrombus burden. This hybrid strategy aimed to maximize clot clearance while minimizing systemic fibrinolytic exposure.

Conclusion: The patient achieved near-complete clot resolution and was discharged with hemodynamic stability and no bleeding complications. This case demonstrates that repeated, multimodal endovascular therapy—

combining mechanical suction and CDT—is a viable, limb-salvaging strategy for recurrent IVC filter thrombosis, even in patients with high bleeding risks.

Session Title: Saturday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: EPIDEMIOLOGICAL TRENDS AND SOCIODEMOGRAPHIC CORRELATES OF NON-RHEUMATIC VALVULAR HEART DISEASE IN ADOLESCENTS AND YOUNG ADULTS: ANALYSIS FROM THE GLOBAL BURDEN OF DISEASE STUDY 2021

Author Block: Shree Rath, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, India

Background: Non-rheumatic valvular heart disease (NRVHD) is a significant global health concern. The aim of this study was to assess trends in NRVHD among individuals aged <20 years using Global Burden of Disease (GBD) 2021 data.

Methods: AAPC estimates with 95% confidence intervals and p-values were extracted for different locations, sex, and age groups. Univariate and multivariate linear regression models were applied to identify predictors of AAPC, with AAPC as the dependent variable and sex and SDI level as independent variables.

Abstract Body: **Results:** The highest AAPC in NRVHD prevalence was observed in High-middle SDI females (1.76%, 95% CI: 1.56-1.96), followed by High SDI females. Low-middle SDI females also showed significant increases (1.54%, 95% CI: 1.45-1.63). In contrast, High SDI males exhibited declining trends (-0.52%). Low-middle SDI males had the highest incidence AAPC (1%, 95% CI: 0.95-1.05), while High SDI males showed the steepest decline (-2.15%, 95% CI: -2.33-1.96). Significant reductions in deaths and DALYs were noted globally, particularly in High SDI regions (High SDI males: -2.14%, 95% CI: -2.31-1.96). Conversely, Low-middle SDI females had non-significant declines in mortality (-0.14%, 95% CI: -0.30-0.01, p=0.08). Middle SDI regions showed intermediate trends, with females consistently experiencing higher prevalence increases than males. Global prevalence rose modestly (AAPC: 0.72%, 95% CI: 0.65-0.80), driven by Low-middle and Middle SDI regions. In multivariate analysis, no single variable independently predicted AAPC with statistical significance; the overall model explained 14.7% of the variance ($R^2 = 0.147$, $p = 0.160$). The location with the highest increasing trend was Low-middle SDI regions ($\beta = 0.63$, $p = 0.104$), though not statistically significant.

Conclusion: NRVHD burden varies markedly by SDI region and sex, with females in higher SDI regions experiencing the most significant increases in prevalence. Declines in mortality and DALYs in High SDI regions suggest improved healthcare access, while rising incidence in Low-middle SDI areas highlights unmet needs. Targeted interventions, especially in lower SDI regions, are essential to address disparities.

Session Title: Saturday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: CHARACTERIZATION OF BURDEN OF AORTIC ANEURISM ACROSS 204 COUNTRIES: AN ANALYSIS FOR THE GLOBAL BURDEN OF DISEASE 2021

Author Block: Shree Rath, All India Institute of Medical Sciences Bhubaneswar, Bhubaneswar, India

Background: Aortic aneurysm (AA) is a commonly occurring emergent surgical condition, associated with poor recovery and outcomes. Emerging evidence suggests a gradual shift in the epidemiology of AA towards the younger population. Aim of this study was to characterize trends in burden due to AA among the working population.

Methods: Disability-adjusted life year (DALY) rates for individuals aged 20-54 and 55+ was collected from the Global Burden of Disease database 2021 from 1990 to 2021. Trends were categorized across locations as low (L), low-middle (LM), middle (M), high-middle (HM), and high (H)-SDI regions. Age standardized rates were assessed for overall trends, followed by stratification based on ages and sexes. Average annual percentage change (AAPC) with 95%CI was estimated employing a linear mixed effect model using RStudio.

Abstract Body: **Results:** Globally, burden due to AA decreased by 1.23% (95%CI: -1.33, -1.13). While age-standardized rates and rates among those aged 55+ increased globally across all sexes, a significantly rising trend was observed among those aged 20-54 years (AAPC: 0.16; 95%CI: 0.06, 0.25), particularly among males (AAPC: 0.32; 95%CI: 0.23, 0.42). Location-wise trends revealed highest burden of AA in LM-SDI males aged 20-54 (AAPC: 1.79; 95%CI: 1.76, 1.83), followed by LM-SDI males overall and those aged above 55. Highest declines in DALYs were observed among males aged 55+ in H-SDI regions (AAPC: -2.91; 95%CI: -3.07, -2.75), followed by females aged 55+ in H-SDI (AAPC: -1.21; 95%CI: -1.37, -1.05).

Conclusion: Globally, while AA was witnessed a decline, trends indicate a rising burden among those aged 20-54 years. This increase is particularly accentuated among males, and those living in LM-SDI regions. Despite global trends, H-SDI regions have witnessed a uniform decline across all age-groups and sexes. These trends highlight the poorer rates of treatment across LM-SDI

regions coupled with the rising rates of risk factors like smoking. Future studies must attempt to assess risk factors leading to these rising trends, and policies must advocate for higher availability of treatment options across LM-SDI regions.

Session Title: Saturday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: TRANSCATHETER VERSUS SURGICAL AORTIC VALVE REPLACEMENT IN PATIENTS WITH AND WITHOUT DIABETES: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Author Block: Hendrianus Hendrianus, Sang Yeub Lee, Young-Hoon Jeong, Jun Hwan Cho, Jinhwan Jo, Eun Jeong Cho, Sang-Wook Kim, Heart and Brain Hospital, Chung-Ang University Medical Center, Seoul, South Korea, Chung-Ang University College of Medicine, Seoul, South Korea

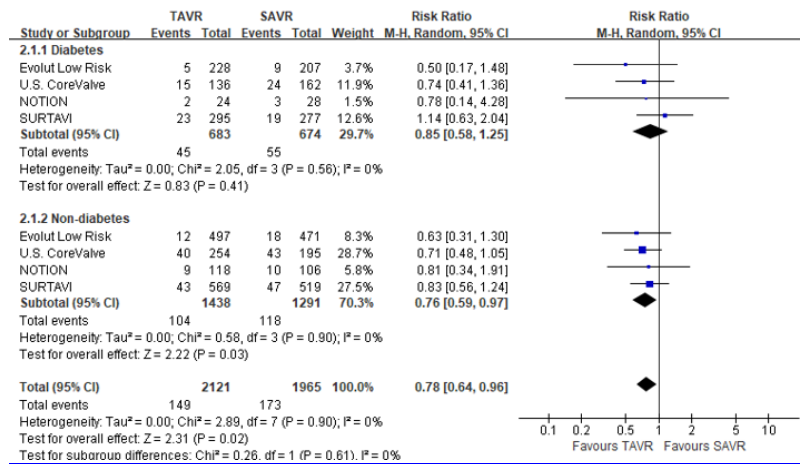
Background: Transcatheter aortic valve replacement (TAVR) has become a standard therapy for severe aortic stenosis across the surgical risk spectrum. Diabetes mellitus is a common comorbidity in these patients and is associated with worse outcomes after surgical AVR (SAVR). Whether diabetes status influences the comparative effectiveness of TAVR versus SAVR remains uncertain.

Methods: We systematically searched CENTRAL, Embase, and PubMed for RCTs comparing TAVR with SAVR. The primary outcome was all-cause mortality or disabling stroke at 1 or 2 years. Data were pooled using a random-effects model, and subgroup analyses were pre-specified based on diabetes status.

Abstract Body: **Results:** Four RCTs comprising 4,086 patients (TAVR: 2,121; SAVR: 1,965) were included. The overall analysis demonstrated a significant reduction in primary endpoint with TAVR compared to SAVR (RR 0.78, 95% CI 0.64-0.96, P=0.02). In patients without diabetes, TAVR was associated with a significant reduction in mortality (RR 0.76, 95% CI 0.59-0.97, P=0.03). In contrast, among patients with diabetes, there was no statistically significant difference between TAVR and SAVR (RR 0.85, 95% CI 0.58-1.25, P=0.41). Heterogeneity was negligible across all analyses ($I^2 = 0\%$).

Conclusion: In this meta-analysis of RCTs, the significant survival benefit of TAVR compared to SAVR was driven entirely by patients without diabetes, whereas patients with diabetes derived no significant survival advantage from

either procedure.



Session Title: Saturday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: "SEVERE MITRAL REGURGITATION CAUSED BY GIANT LEFT ATRIAL MYXOMA: A RARE PRESENTATION"

Author Block: Rukhsar Memon, Rabia Saleheen, Khawaja Muhammad Aarij, Wajid Hussain, SR, Samir Rehman, Fawad Farooq, Muhahammad Asad bilal Awan, ABDUL HAMEED, Sabha Bhatti, National Institute of Cardiovascular Diseases, karachi, DE, Pakistan

Abstract Body:

Background: Left atrial myxoma is the most common primary cardiac tumor, typically presents with mitral valve obstruction, but large masses may distort valvular anatomy and cause mitral regurgitation (MR).

Case: A young female presented with a 6-month history of dyspnea, reduced exercise tolerance, and recurrent dizziness. Clinical examination revealed a holosystolic apical murmur suggestive of mitral regurgitation. Echocardiography identified a large mobile mass arising from the interatrial septum and prolapsing through the mitral valve, resulting in severe (MR) due to impaired leaflet coaptation. Cardiac MRI further characterized the lesion as a heterogeneous 9.5 × 3.5 cm mass consistent with myxoma.

Decision-making: Given the mass size and hemodynamic impact, urgent surgical intervention was undertaken. A gelatinous tumor attached to the fossa ovalis was excised en bloc. Mitral valve showed irreversible degeneration, requiring mechanical valve replacement. Postoperative imaging confirmed complete resection and normal prosthetic function. Recovery was uneventful and histology confirmed benign myxoma.

Conclusion: This case highlights an uncommon presentation of large myxoma producing severe mitral regurgitation. Multimodality imaging and timely surgical intervention can restore cardiac function and yield an excellent

prognosis.

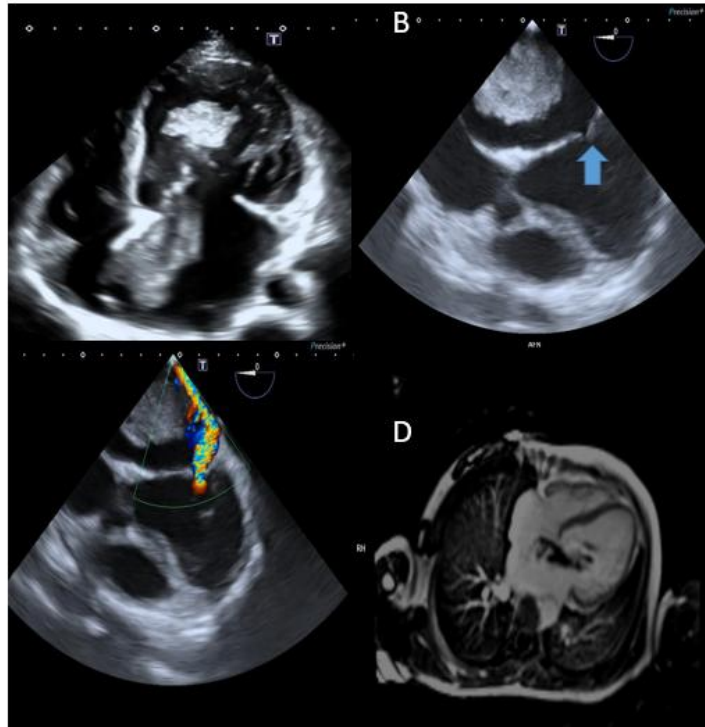


Figure 1 (A) TTE apical four chamber view showing large irregular mass attached to IAS protruding into LV from LA through mitral valve. (B) TEE 0 degree four chamber view, arrow showing impaired leaflets coaptation. (C) TEE 0 degree four chamber view color Doppler showing eccentric MR jet. (D) Cardiac MRI LGE (late gadolinium enhancement showing heterogeneous mass in LA attached to interatrial septum.

Session Title: Saturday Poster Session

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: ACUTE ABDOMINAL PAIN MASKING A DUAL VASCULAR EMERGENCY: ISOLATED ILIAC ARTERY DISSECTION WITH SUPERIOR MESENTERIC ARTERY THROMBOSIS

Author Block: Ryan Lao, Clarence Nicole Perez, The Medical City, Pasig City, Philippines

Background: Isolated iliac artery dissection is rare and may mimic gastrointestinal causes of acute abdominal pain. The presence of a concurrent superior mesenteric artery thrombosis increases the risk of mesenteric ischemia and presents a therapeutic dilemma.

Case: A 48-year-old hypertensive man with history of vape and drug use presented with severe post-prandial burning epigastric pain. He had a blood pressure of 200/100 mmHg, cardiac rate 76 bpm, respiratory rate 19 cpm, SpO2 97%, and afebrile. No evidence of direct abdominal tenderness or indications of limb ischemia was observed. A contrast-enhanced computed tomography aortogram revealed 5.7 cm right common iliac artery dissection with superior mesenteric artery (SMA) thrombus causing near occlusion. Blood pressure and heart rate were controlled with nicardipine and esmolol. Urgent endovascular stenting of the right common iliac artery was initially performed as a repair first approach. Given the thrombus burden, anticoagulation strategy with apixaban was initiated afterwards. He was transitioned to telmisartan, amlodipine, metoprolol, and indapamide and was eventually discharged.

Abstract Body:

Decision-making: The coexistence of common iliac artery dissection and SMA thrombus demonstrates a high-risk vascular condition that can be potentially life-threatening. Treatment sequence is critical. Endovascular stenting stabilized the dissection flap, restored flow to the distal vessels, and reduced the risk of propagation. Once vessel integrity was secured, anticoagulation was safely initiated for the thrombus without risk of further dissection. A repair first approach is consistent with reported strategies for peripheral arterial dissections. The patient's severe hypertension enhanced by chronic drug and vape use, may have contributed to endothelial dysfunction, increasing

susceptibility to dissection and thrombosis.

Conclusion: Stabilizing the dissection before initiating anticoagulation provided a safe and effective strategy for treating concurrent iliac artery dissection and SMA thrombus. This case highlights the importance of sequencing and early coordinated management in complex vascular emergencies.

Session Title: Valvular Diseases and Structural Interventions Oral Abstracts

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: PROCEDURAL SIMPLIFICATION IN MITRAL TRANSCATHETER EDGE-TO-EDGE REPAIR: SOLE TRANSESOPHAGEAL ECHOCARDIOGRAPHIC GUIDANCE AND OUTCOMES

Author Block: Jianrui Ma, Xiangbin Pan, Fuwai Hospital, Beijing, People's Republic of China

Abstract Body:

Background: Our group pioneered attempts to simplify the mitral transcatheter edge-to-edge repair (M-TEER) procedure under full echocardiographic guidance; however, its safety and effectiveness remain unclear. This study aimed to compare its outcome with the traditional procedure under echocardiographic and fluoroscopic co-guidance.

Methods: From Jan 2021 to Nov 2025, 505 mitral regurgitation (MR) patients undergoing the simplified M-TEER procedure (Echo guidance group, n=359) and the traditional M-TEER procedure (Co-guidance group, n=146) were retrospectively reviewed. The propensity score matching (PSM) method was performed as a sensitivity analysis.

Results: The 30-day major adverse event, technical success, device success, and procedural success in the Echo guidance group were 6.51%, 97.3%, 89.4%, and 88.5%, similar to 8.54%, 96.3%, 84.1%, and 82.9% in the Co-guidance group, respectively ($p > 0.05$). Significant MR reduction and NYHA functional class improvements from the baseline to discharge or latest follow-up were shown in both two groups ($p < 0.05$). The 1-year freedom from cardiovascular mortality, all-cause mortality, and a composite of all-cause mortality and heart failure hospitalization was $96.0\% \pm 2.0\%$, $94.5\% \pm 2.4\%$, and $90.2\% \pm 3.4\%$ in the Echo guidance group, similar to $92.2\% \pm 3.1\%$, $92.1\% \pm 3.1\%$, and $88.4\% \pm 3.6\%$ in the Co-guidance group, respectively ($p > 0.05$). PSM-cohort analysis confirmed these findings.

Conclusion: The simplified M-TEER procedure under full echocardiographic guidance showed comparable outcomes to the traditional procedure under echocardiographic and fluoroscopic co-guidance. Our work has the potential to simplify and revolutionize the M-TEER methodology and further expand its applications.

Session Title: Valvular Diseases and Structural Interventions Oral Abstracts

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: EARLY AND LATE ASCENDING AORTIC REMODELING AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT IN PATIENTS WITH AORTIC STENOSIS

Author Block: 新龙 第, Yipin Zhao, Zebin Lin, Jianmin Tang, Yuhao Liu, Yiqiang Yuan, Department of Cardiology, Fuwai Central China Cardiovascular Hospital, ZhengZhou, People's Republic of China, Department of Cardiology, The Second Affiliated Hospital of Zhengzhou University, ZhengZhou, People's Republic of China

Background: The remodeling pattern of the ascending aorta (AA) after transcatheter aortic valve replacement (TAVR) in patients with bicuspid aortic valve (BAV) compared to tricuspid aortic valve (TAV) remains debated.

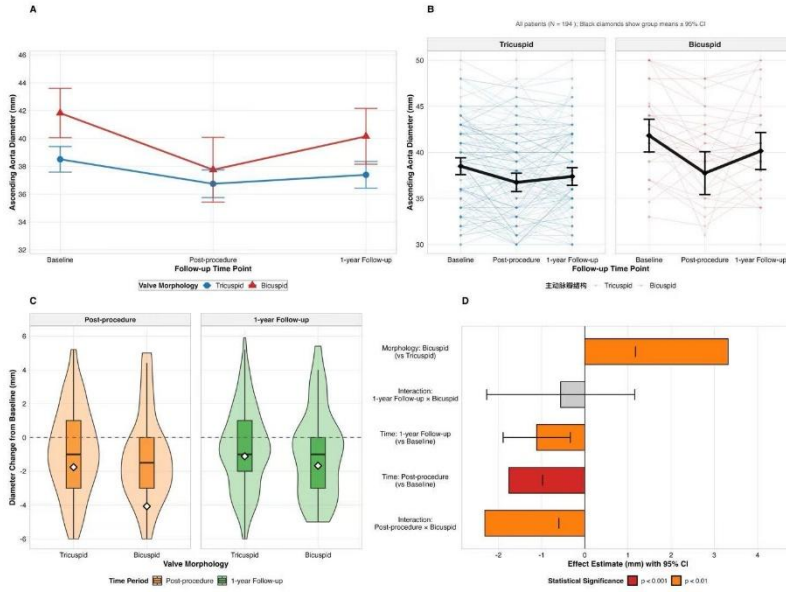
Methods: This single-center study included 194 patients with severe aortic stenosis (BAV=20.6%, TAV=79.4%). AA diameter was measured via transthoracic echocardiography at baseline, post-procedure (pre-discharge), and 1-year follow-up. A mixed-effects model assessed the effects of time, valve morphology, and their interaction.

Abstract Body: **Results:** The baseline aortic diameter in BAV patients (41.8 mm) was significantly larger than that in TAV patients (38.5 mm), with a mean difference of 3.32 mm ($p=0.003$). Postoperative aortic diameter decreased significantly in both groups, but the reduction was greater in the BAV group (-4.07 mm vs. -1.76 mm; interaction $p=0.008$). At 1-year follow-up, TAV patients maintained stable diameters ($p=0.238$), whereas the BAV group exhibited partial rebound, increasing by 2.40 mm compared to postoperative measurements ($p=0.006$). Intra-group variability was substantial ($ICC=0.681$).

Conclusion: The AA remodeling trajectory after TAVR starkly differs by valve morphology: a stable course in TAV versus an “early reduction-late rebound” pattern in BAV. This mandates closer long-term aortic surveillance for BAV

patients.

Longitudinal Changes in Ascending Aorta Diameter After TAVR Comparison between Tricuspid and Bicuspid Aortic Valve Morphologies



Data presented as mean ± 95% confidence interval.

Figure A: Mean aortic diameter changes over time.

Figure B: Individual patient trajectories with group means (black diamonds).

Figure C: Distribution of diameter changes from baseline.

Figure D: Fixed effects from linear mixed-effects model.

NS = not significant ($p > 0.05$).

N = 134 Tricuspid and 40 Bicuspid valve patients.

Session Title: Valvular Diseases and Structural Interventions Oral Abstracts

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: CARDIAC MAGNETIC RESONANCE IMAGING VERSUS COMPUTED TOMOGRAPHY TO GUIDE TRANSCATHETER AORTIC VALVE REPLACEMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS

Author Block: Mohammad Eisa Ali, Song Kwan Kim, Muhammad Ahsan, Syed Muhammad Taq Abbas, Tehreem Farooq, Hiba Zafar, Safa Mazhar, Suheera Afzoon, Areeba Khan, Zara Fareed Wahidi, Sahar Fatima, Shanza Shakil, Bakhtawar Zahoor, Nilay Bhatt, Maleeha Pandit, University of Pavia, Pavia, Italy

Background: Accurate preprocedural imaging is essential for transcatheter aortic valve replacement (TAVR) in severe aortic stenosis (AS), yet computed tomography (CT) may be limited in patients at risk for contrast-induced acute kidney injury (AKI). Cardiac magnetic resonance (CMR) has emerged as a potential contrast-free alternative

Methods: A systematic review and meta-analysis was conducted following PRISMA guidelines and registered on PROSPERO. Seven studies including 526 patients undergoing TAVR evaluation with CMR, CT, or both were analyzed. Pooled mean differences were calculated using a random-effects model across fourteen anatomical domains relevant for TAVR planning.

Abstract Body: **Results:** CMR and CT demonstrated excellent agreement across most annular and vascular dimensions. Annulus area, maximum annulus diameter, sinotubular junction diameter, ostial heights, ascending aorta diameter, and iliofemoral vessel diameters showed no significant differences. Small but statistically significant differences were observed for annulus perimeter (MD -1.71 mm; p=0.02) and minimum annulus diameter (MD -0.52 mm; p=0.04), though absolute magnitudes were clinically negligible. Sensitivity analyses eliminated heterogeneity in multiple domains, confirming measurement stability. CMR provided reliable anatomical assessment without radiation or iodinated contrast exposure.

Conclusion: CMR offers measurement accuracy equivalent to CT across key parameters required for TAVR planning. Given its contrast-free nature, CMR represents a robust alternative for patients with renal impairment or contrast

allergy. Imaging modality selection should therefore be individualized based on patient-specific risk rather than concerns over diagnostic precision.

Session Title: Valvular Diseases and Structural Interventions Oral Abstracts

Topic 1: Valvular Diseases and Structural Interventions

Publishing Title: SEX-SPECIFIC OUTCOMES OF TAVR VERSUS SAVR OVER TIME: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Author Block: Hendrianus Hendrianus, Sang Yeub Lee, Young-Hoon Jeong, Jun Hwan Cho, Jinhwan Jo, Eun Jeong Cho, Sang-Wook Kim, Heart and Brain Hospital, Chung-Ang University Medical Center, Seoul, South Korea, Chung-Ang University College of Medicine, Seoul, South Korea

Abstract Body: **Background:** Sex influences the risks and outcomes of transcatheter (TAVR) and surgical (SAVR) aortic valve replacement, yet robust sex-specific evidence from randomized trials remains limited. We therefore performed a meta-analysis to assess the interaction between sex and procedure type on the composite endpoint of all-cause mortality or stroke at 1 and 5 years.

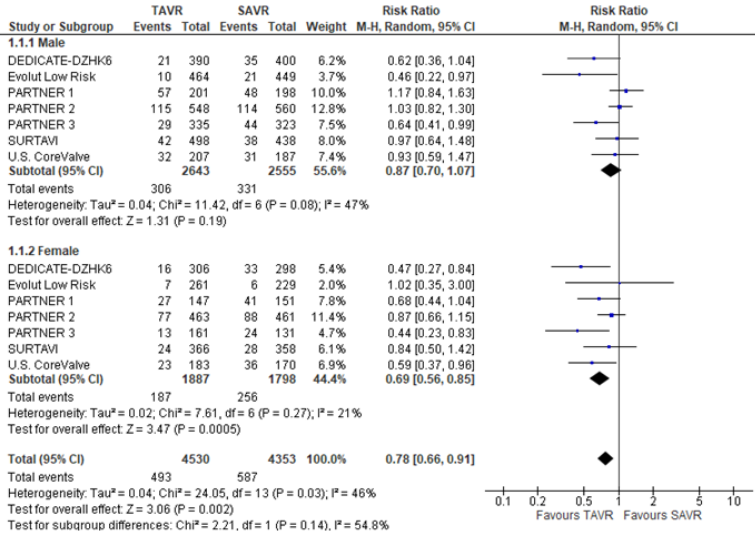
Methods: A systematic search of PubMed, Embase, and the Cochrane CENTRAL was conducted from inception to October 2025 for all RCTs comparing TAVR versus SAVR. The primary outcome was the sex-subgroup analysis of the composite of all-cause mortality or stroke. Data were pooled using a random-effects model.

Results: Seven RCTs were included, encompassing 8,883 patients (5,198 males; 3,685 females). At 1 year, a significant reduction in the primary endpoint was observed with TAVR in females (RR 0.69, 95% CI 0.56-0.85, $P=0.0005$; $I^2=21\%$), but not in males (RR 0.87, 95% CI 0.70-1.07, $P=0.19$; $I^2=47\%$). The test for interaction was not statistically significant ($P=0.14$). At 5 years, the outcomes for females became comparable between TAVR and SAVR (RR 1.03, 95% CI 0.89-1.20, $P=0.66$; $I^2=52\%$), while a trend towards SAVR was observed in males (RR 1.06, 95% CI 0.98-1.14, $P=0.15$; $I^2=7\%$).

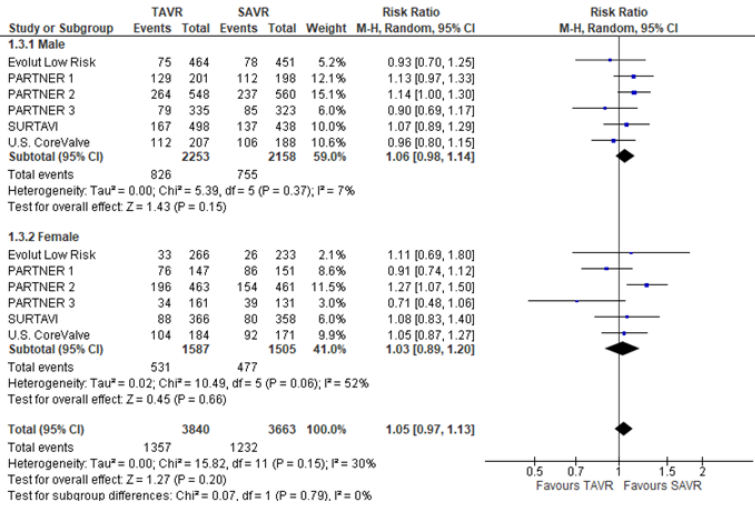
Conclusion: This pooled analysis reveals a time-dependent, sex-specific treatment effect. Women derived a significant early benefit from TAVR at 1 year, which converged to equipoise with SAVR by 5 years. In contrast, long-term

outcomes in men showed a trend favoring SAVR.

A. Forest Plot at 1-Year Follow-up



B. Forest Plot at 5-Year Follow-up



Session Title: Complex Cases in Cardiac Arrhythmias

Topic 1: Cardiac Arrhythmias

Publishing Title: EFFECTIVE CONTROL OF HYDROPIc FETAL SUPRAVENTRICULAR TACHYCARDIA USING DIGOXIN PLUS FLECAINIDE-A CLINICALLY CHALLENGING CASE

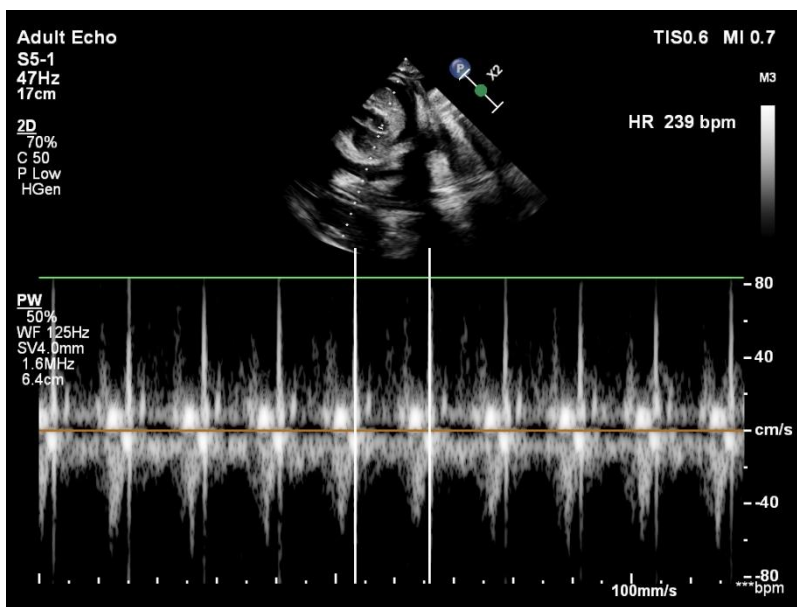
Author Block: Satish Kumar Subbaraj, Ramesh Ramachandran, Selvarani Gnanamuthu, Saravanan Rathinam Ramasmy, Hemanath Thindukkal Ramamurthy, Nisamudeen Kajamohideen, Prasanna Rajguru Prakasha babu, RAJA SELVARAJ, MADURAI MEDICAL COLLEGE, Madurai, India

Background: Fetal supraventricular tachycardia (SVT) is the most common fetal arrhythmia, with an incidence of 1 in 2,000 pregnancies. Sustained tachycardia in utero can lead to impaired ventricular filling, reduced cardiac output ultimately hydrops fetalis, which carries high perinatal mortality.

Case: A 27-year-old second gravida at 30 weeks gestation was referred following detection of persistent fetal tachycardia during routine ultrasound. Fetal echo revealed a structurally normal heart with SVT at 220-240 bpm. Early signs of chamber dilation were noted. Hydrops was absent. Maternal history was unremarkable.

Abstract Body: **Decision-making:** Initial treatment involved maternal digoxin therapy. Within 48 hours, fetal heart rate decreased modestly but remained intermittently tachycardic. Flecainide was added as a second-line drug. Conversion to sinus rhythm occurred within 72 hours of therapy. No recurrence was observed. At 37 weeks, patient underwent elective repeat LSCS, resulting in a healthy neonate. Postnatal evaluation confirmed structurally normal cardiac anatomy and no arrhythmia recurrence during neonatal follow-up.

Conclusion: Fetal SVT can be effectively managed with transplacental antiarrhythmic therapy improving neonatal outcomes. Early diagnosis, stepwise management, and close maternal-fetal monitoring are critical. This case highlights the importance of individualized therapy and multidisciplinary collaboration in optimizing perinatal survival.



Session Title: **Complex Cases in Cardiac Arrhythmias**

Topic 1: Cardiac Arrhythmias

Publishing Title: RETROGRADE CORONARY VENOUS ETHANOL ABLATION

Author Block: Yong Xin Tan, Cheng Hsin general hospital, Taipei, Taiwan

Abstract Body:

Background: A 68-year-old man with rheumatic heart disease status post double-valvareplacements and VT managed with an ICD presented with recurrent palpitations for 3 weeks.

Case: On admission, the ECG revealed slow VT at 114 beats per minute, with a Q wave in lead I and a maximum deflection index ≥ 0.55 in V6, suggesting a left-epicardial origin. TEE showed severe biventricular systolic dysfunction(LVEF 15%, RVEF 28%), coronary angiography demonstrated patent coronary arteries.

Decision-making: Catheter ablation was but aepicardial approach was not feasible because ofpericardial adhesions from prior cardiac surgeries. EP study induced VT with a cycle length of 530 ms, with earliest activation recorded near the mid-coronary sinus. Mapping localized the earliest ventricular electrogram to a small OM branch, preceding QRSONset by 42 ms. A 2.0 × 12 mm over-the-wire balloon was positioned at this site, followed by intracoronary injection of 1 mL of 99% ethanol. VT cycle length prolonged to 580 ms and post-ablation electrograms distal to the target site showed no residual focal activity.The patient remained free of recurrent VT during follow-up, and LVEF improved to22%.

Conclusion: This case illustrates transc coronary ethanol ablation as an effective alternative whenepicardial access is precluded by prior surgical adhesions. Careful identification ofthe culprit arterial branch perfusing the

arrhythmogenic substrate is essential for procedural success.



Session Title: Complex Cases in Cardiac Arrhythmias

Topic 1: Cardiac Arrhythmias

Publishing Title: BROAD-INSERTION LEFT ACCESSORY PATHWAY WITH MISLEADING ECG AND NO CORONARY SINUS ACCESS: SUCCESSFUL ABLATION IN A YOUNG PATIENT

Author Block: Ian Montenegro, [Jeniseth Atencio](#), Juan De Dios Gonzalez, ARMANDO GARRIDO, Jose M. Aguirre, Centro Nacional Especializado Cardiovascular y Toracico, Panama, Panama

Abstract Body:

Background: Broad-insertion left-sided accessory pathways are rare and may mimic dual pathways, prolonging procedures if not recognized early.

Case: A 19-year-old woman with seven years of symptomatic paroxysmal tachycardia remained highly symptomatic despite propafenone. Baseline ECG showed a short PR interval and manifest preexcitation with atypical inferior-lead polarity (DII positive, DIII negative), discordant with a classic left posterolateral pathway.

Decision-making: Coronary sinus cannulation was unsuccessful, likely due to a prominent valve, limiting reference mapping of the mitral annulus. Retroaortic CARTO mapping revealed an unusually wide earliest-activation zone mimicking two pathways. A Mariner catheter improved fluoroscopic visualization but provided insufficient contact for effective energy delivery. Avoiding an unnecessary transseptal approach, sequential mapping identified a single broad-insertion pathway with an extended activation footprint that distorted the expected ECG pattern.

Conclusion: High-power (50 W) radiofrequency at the true critical site achieved immediate and durable elimination of preexcitation. This case highlights how broad-insertion pathways and absence of CS reference can mislead ECG-based localization and demonstrates successful ablation of a

complex substrate in a young patient.

Figure 1. Comprehensive Mapping Workup of a Broad-Insertion Pathway



Figure 1. (A) Activation map showing a broad early-activation zone mimicking dual pathways; the true critical site was identified and successfully ablated. (B) LAO 30° fluoroscopic view showing failed coronary sinus cannulation, limiting mitral annular reference during mapping. (C) Baseline ECG demonstrating manifest preexcitation with atypical inferior-lead polarity (DII positive, DIII negative), leading to misleading localization. (D) Post-ablation ECG showing complete loss of preexcitation and normalization of the PR interval.

Session Title: Complex Cases in Cardiac Arrhythmias

Topic 1: Cardiac Arrhythmias

Publishing Title: SECOND DEGREE 2:1 ATRIOVENTRICULAR BLOCK WITH COMPLETE RIGHT BUNDLE BRANCH BLOCK IN THE SETTING OF PERICARDIAL EFFUSION WITH TAMPONADE

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Background: Pericardial tamponade usually presents with tachycardia; high-grade atrioventricular (AV) block is uncommon.

Case: A man with dyspnea and bradycardia had electrocardiography showing 2:1 AV block with right bundle branch block. Echocardiography revealed moderate circumferential effusion with right-sided chamber collapse. Limited windows prevented safe pericardiocentesis, so surgical drainage was performed. After decompression he returned to sinus rhythm with no recurrent AV block. Fluid studies suggested lymphocytic inflammation.

Decision-making: This case highlights a rare but reversible cause of high-grade AV block. Recovery of AV conduction after drainage supports tamponade as the culprit and reinforces evaluating for reversible causes before permanent pacing. Imaging confirmed hemodynamic compromise and guided surgery. Cardiac magnetic resonance (CMR) would have been helpful to assess myocardial inflammation or infiltration not well defined by echocardiography.

Abstract Body:

Conclusion: Pericardial tamponade may present with high-grade AV block, and timely drainage can restore conduction. CMR offers complementary evaluation when myocardial involvement is suspected.

