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ACC 2025 – General Overview

- ➔ • **Landmark Occasion:** Celebrates the 75th anniversary of the ACC, emphasizing legacy, innovation, and global cardiovascular impact
- ➔ • **Multidisciplinary Engagement:** Features global leaders in cardiology, surgery, AI, imaging, and interventional sciences across diverse educational formats
- ➔ • **Data-Driven Presentations:** Late-breaking clinical trials and abstracts deliver practice-changing data across prevention, interventions, heart failure, and structural heart disease
- ➔ • **Industry Collaboration:** Extensive expo with cutting-edge technologies, pharma partnerships, and device innovations in cardiovascular treatment
- ➔ • **Expo Showcase:** The largest gathering of cardiovascular products and services, offering hands-on engagement with next-gen tools and therapies
- ➔ • **Hybrid Participation:** Offers flexible options for in-person attendance or full virtual access to all scientific sessions



ACC 2025– Conference Themes (1/2)

- **Late-Breaking Clinical Trials (LBCTs):** New data on lipid management, SGLT2 inhibitors, GLP-1s, and antithrombotic strategies will shape future treatment paradigms
- **Structural Heart Interventions:** Advances in TAVR, mitral repair, and tricuspid therapies highlight minimally invasive solutions for complex valve disease
- **Atrial Fibrillation & Arrhythmias:** Studies explore rhythm control, ablation innovations, and stroke prevention including LAAO devices
- **Heart Failure Management:** Emerging evidence on guideline-directed therapy optimization and novel HFpEF therapeutics in diverse patient populations
- **Coronary Artery Disease:** Precision-guided PCI, plaque imaging, and risk stratification tools featured in stable and acute coronary syndrome settings





ACC 2025– Conference Themes (2/2)



- **Cardio-Oncology & Multisystem Disease:** Sessions will address CV complications of cancer therapies and systemic inflammatory conditions affecting the heart
- **Health Equity & Disparities:** Data will emphasize outcomes across racial, sex, and socioeconomic lines, spotlighting unmet needs in underserved populations
- **Artificial Intelligence & Digital Health:** Use of AI in ECG interpretation, diagnostics, and personalized care algorithms will be featured prominently
- **Preventive Cardiology & Lipids:** Emphasis on early intervention, lipid-lowering therapies, and novel agents for atherosclerotic risk reduction
- **Imaging & Diagnostics:** Cutting-edge imaging for structural assessment, myocardial viability, and real-time decision-making in intervention

Noteworthy Scientific presentations at ACC 2025





Key Topics From Notable Presentations (1/9)



- **Ischemic Heart Diseases:** Sessions will highlight clinical decision-making in MVD and Stroke Management and how complete revascularization improves outcomes in MVD, while DAPT offers benefits for ischemic outcomes but comes with bleeding risks. Beta-blocker use post-MI with preserved EF may need to be revisited
- **Complete Revascularization in MI with Multivessel Disease (MVD):** The study on complete revascularization vs. culprit-only PCI in MI patients with MVD shows that complete revascularization reduces MACE, cardiovascular death, and ischemia-driven revascularization without compromising safety, especially in males, non-elderly, and non-diabetic patients
- **DAPT vs. Aspirin Alone in Ischemic Stroke/TIA:** A systematic review and meta-analysis revealed that DAPT reduced recurrent ischemic stroke and MACE but increased bleeding risk, suggesting the need for further trials to resolve the optimal treatment duration for ischemic stroke patients
- **Beta-Blocker Use Post-MI in Patients with Preserved Ejection Fraction:** A meta-analysis of post-MI patients with preserved EF demonstrated that beta-blocker use does not show significant benefits in reducing mortality, heart failure, or recurrent MI, indicating a need to reconsider routine use in these patients





Key Topics From Notable Presentations (2/9)



- **Pulmonary Vascular Disease:** The spotlight will be on advanced Management & Global Trends in PAH and PE. Mechanical thrombectomy provides superior outcomes in PE, while treprostinil continues to show promise in managing PAH symptoms. Disparities in PAH trends across regions underscore the need for better diagnosis and care accessibility
- **Mechanical Thrombectomy vs. Systemic Thrombolysis in Pulmonary Embolism (PE):** A large retrospective study comparing mechanical thrombectomy (MT) and systemic thrombolysis (ST) in PE management shows MT significantly reduces in-hospital mortality and complications, making it a superior option in advanced PE cases
- **Treprostinil in Pulmonary Arterial Hypertension (PAH):** A meta-analysis of 11 randomized trials demonstrates that treprostinil improves exercise capacity, cardiac function, and symptom burden in PAH patients without affecting survival, solidifying its place in symptomatic management
- **Pulmonary Arterial Hypertension (PAH) in Youth and Global Trends:** Analysis of global data reveals rising PAH prevalence in high-middle SDI regions, highlighting the need for improved healthcare access in lower SDI regions, which show declining trends due to underdiagnosis



Key Topics From Notable Presentations (3/9)



- **Pulmonary Vascular Disease:** Experts will discuss improved Management of Valvular Diseases. The studies will highlight significant advancements in tailored surveillance for AS and TTR-CA, the superiority of DOACs in R-MVD, and the impact of standardizing TAVR care on survival outcomes
- Aortic Stenosis (AS) and Transthyretin Cardiac Amyloidosis (TTR-CA) Progression: A study found AS progresses almost twice as fast in TTR-CA patients compared to those without, urging tailored surveillance strategies for these high-risk patients
- DOACs vs. Warfarin in Rheumatic Mitral Valve Disease (R-MVD) with Atrial Fibrillation (AF): A retrospective cohort study demonstrated that DOACs significantly reduced thromboembolic events, mortality, and bleeding compared to warfarin, supporting their use in high-risk R-MVD patients with AF
- Standardization of TAVR Care to Improve Patient Survival: A collaboration across six TAVR programs showed that system-wide standardization significantly reduced 1-year mortality rates, proving effective in high-risk patient populations



Key Topics From Notable Presentations (4/9)



- **Vascular Diseases:** Presentations are set to address Uncontrolled Hypertension and Resistance. The findings will underline the global challenge of hypertension control, the promising role of MANP in resistant hypertension, and the compounding cardiovascular risks from environmental factors like air pollution
- **EnligHTN Study on Hypertension Control:** A study analyzed 46,376 hypertension patients from the US and UK, showing 69-70% inadequate control despite treatment, highlighting a need for improved strategies and better management of comorbidities
- **MANP for Resistant Hypertension in African Americans:** A Phase 2 RCT found that MANP, an ANP analog, significantly reduced systolic blood pressure, with a stronger effect in African American patients, suggesting its potential in addressing resistant hypertension
- **Impact of Air Pollution on Atherosclerosis:** A study revealed that high air pollution combined with short leukocyte telomere length (LTL) worsens atherosclerotic burden, indicating compounded cardiovascular risk in vulnerable populations



Key Topics From Notable Presentations (5/9)



- **Cardiac Arrhythmias:** The presentations are set to showcase disparities and treatment effectiveness. Racial disparities in post-ablation outcomes and the safety of class IC drugs in NICM patients will underline the importance of personalized treatment strategies and further investigation into arrhythmic care
- **ECG Abnormalities in Young Female Athletes:** In a cohort of 2,948 female athletes, 4.2% had ECGs flagged for review, with 23% showing abnormalities. Further research is needed to determine whether these findings reflect normal adaptations or underlying conditions
- **Racial Disparities in Atrial Flutter Ablation Outcomes:** A retrospective study with 9,180 atrial flutter patients revealed that African American patients had significantly higher cardiovascular morbidity post-ablation, despite similar mortality rates, highlighting a need for tailored care
- **Class IC vs. Class III Antiarrhythmic Drugs in Non-Ischemic Cardiomyopathy (NICM):** A cohort study in NICM patients indicated that class IC antiarrhythmic drugs were associated with superior event-free survival compared to class III drugs, challenging current treatment guidelines



Key Topics From Notable Presentations (6/9)



- **Heart Failure and Cardiomyopathies:** Targeted Therapies in ATTR-CM and Heart Failure will be discussed. Studies on vutrisiran, RNA interference therapy, and SGLT2 inhibitors will underscore the evolving role of targeted treatments in managing ATTR-CM and heart failure, with improvements in mortality, function, and quality of life
- **Vutrisiran in ATTR-CM:** The HELIOS-B Phase 3 trial confirmed that vutrisiran significantly reduces all-cause mortality and cardiovascular events, improving functional outcomes and quality of life across varying baseline severities in transthyretin amyloid cardiomyopathy (ATTR-CM)
- **RNA Interference Therapy in ATTR-CM:** A meta-analysis of four studies demonstrated that RNA interference therapy significantly reduces mortality, improves exercise capacity, and enhances quality of life in ATTR-CM patients, supporting its therapeutic potential
- **SGLT2 inhibitors in TTR-CA:** SGLT2 inhibitors showed improved NYHA class, reduced mortality, and better renal function in TTR-CA, with promising safety profiles. These findings support the use of SGLT2i in this condition but warrant confirmation via randomized trials



Key Topics From Notable Presentations (7/9)



- **Cardiac Disease Prevention:** Sessions will highlight Combined Therapies and New Agents in Cardiac Prevention. Studies are expected to confirm that combinations like SGLT2 inhibitors with colchicine, as well as novel agents like tirzepatide, provide significant benefits in reducing cardiovascular risk and improving patient outcomes. Further validation through larger studies is necessary to establish long-term efficacy
- **SGLT2 Inhibitors and Colchicine in CAD:** Combination therapy significantly reduced all-cause mortality, MACE, ischemic stroke, and atrial fibrillation in CAD patients compared to colchicine alone
- **Nebivolol and Valsartan in Hypertension:** The nebivolol/valsartan combination therapy improved systolic blood pressure control, offering a more effective treatment compared to monotherapy
- **Incretin-Based Therapies (Tirzepatide and Semaglutide):** Tirzepatide showed a significant reduction in MACE risk in T2DM patients, particularly at higher doses, demonstrating superior cardiovascular benefits compared to Semaglutide



Key Topics From Notable Presentations (8/9)



- **Congenital Heart Disease:** Discussion will be on advancements in CHD Management and Long-term Care. The findings will underscore the effectiveness of new therapies like cardiac myosin inhibitors in HCM, the importance of tailored care for DS patients, and the role of ASD closure in improving cardiac remodeling and function
- **Cardiac Myosin Inhibitors in Hypertrophic Cardiomyopathy (HCM):** A meta-analysis of six RCTs (n=826) demonstrated that cardiac myosin inhibitors significantly improved hemodynamic and functional outcomes, reducing LVOT gradients and enhancing quality of life without additional safety concerns
- **Outcomes of DiGeorge Syndrome (DS) Patients Post-CHD Surgery:** A comparison of 3,283 DS patients with non-DS controls revealed that while DS patients had higher postoperative complications and readmissions, long-term survival rates were comparable, supporting tailored perioperative care
- **Ventricular Remodeling Post-Atrial Septal Defect (ASD) Closure:** In 143 patients from the GORE ASSURED trial, ASD closure led to favorable reverse remodeling, with a reduction in RV size and improvement in LV dimensions while preserving myocardial function



Key Topics From Notable Presentations (9/9)



- **Special Topics:** Emerging cardiovascular treatments, with a focus on personalized therapies and addressing healthcare disparities, are set to transform outcomes for heart failure, aortic valve diseases, and hypertension management
- **Advancements in Heart Failure and Hypertension Management:** Presentations will focus on personalized care strategies for heart failure, the impact of telehealth, and novel antihypertensive treatments like **lorundrostat**, alongside exploring racial and gender disparities in heart failure outcomes
- **Innovative Aortic Valve Disease Treatments:** Key studies will highlight long-term outcomes of transcatheter and surgical valve replacements, with an emphasis on the **PROTECT-TAVI trial** and advancements in treating aortic stenosis and regurgitation
- **Disparities in Cardiovascular Care and Treatment Access:** Sessions will explore disparities in cardiovascular care, focusing on differences in heart failure management, mortality rates, and access to treatments like cardiomechs implantation and heart transplantation, with a focus on addressing racial and ethnic gaps





Focus of Key Industry Sponsored Sessions at ACC 2025 (1/2)

- **AstraZeneca:**

- Focus Areas: Health Equity in hATTR, ATTR-CM Treatment Patterns, and Community-Based Cardiovascular Prevention
- Sessions will examine health disparities in hereditary transthyretin amyloidosis (hATTR), real-world ATTR-CM treatment rates in Medicare populations, and strategies to enhance community cardiovascular education and screening

- **Novartis:**

- Focus Areas: RNA Therapeutics & LDL-C Management with Inclisiran
- Presentation will discuss RNAi-based innovations in cardiovascular medicine and present real-world adherence benefits of inclisiran in atherosclerotic cardiovascular disease (ASCVD) management

- **BMS/Pfizer:**

- Focus Areas: Hypertrophic Cardiomyopathy Symptom Assessment
- Session will introduce the validated HCMSQ 7-Day Recall tool to measure patient-reported outcomes in hypertrophic cardiomyopathy, supporting future trial designs and patient-centric care



Focus of Key Industry Sponsored Sessions at ACC 2025 (2/2)

- **Johnson & Johnson:**

- Focus Areas: Diversity & Cardiovascular Health Access
- Sessions will focus on promoting female leadership in trials and advancing public cardiovascular health via community-centric education initiatives

- **Amgen Inc:**

- Focus Areas: Lipid Lowering in High-Risk ASCVD Without Prior MI or Stroke
- Presentation will reveal preliminary U.S. data from the VESALIUS-REAL study on lipid therapy uptake among high-risk ASCVD patients lacking prior major CV events



Notable Presentations and Late-breaking Sessions at ACC 2025

Notable Presentations at ACC 2025

Ischemic Heart Diseases (1/8)



Date	Title	Author	Summary
29 Mar 2025	<u>META-ANALYSIS TO EVALUATE THE EFFICACY AND SAFETY OF ANTIPLATELET MONOTHERAPY FROM 1 MONTH COMPARED TO LONGER DUAL ANTIPLATELET THERAPY DURATIONS AFTER PERCUTANEOUS CORONARY INTERVENTION</u>	Guillermo Loyola	• Introduction: Traditional DAPT duration post-PCI is 6–12 months; however, emerging data suggest one-month DAPT may offer comparable protection with improved safety. • Methodology: A systematic review/meta-analysis of 6 RCTs (n=25,570) compared one-month DAPT followed by monotherapy vs. longer DAPT. Primary composite outcomes included death, MI, stroke, urgent revascularization, and bleeding. Random-effects modeling and I² assessed variability. • Results: One-month DAPT significantly reduced composite events including bleeding (HR: 0.86; 95% CI: 0.78–0.94; I² = 55.62%). Without bleeding, efficacy remained comparable (HR: 0.93; 95% CI: 0.77–1.12; I² = 65.99%). • Conclusions: Shorter DAPT durations may balance efficacy with reduced bleeding risk, warranting consideration in tailored PCI strategies.
29 Mar 2025	<u>TARGETING INVESTIGATION AND TREATMENT IN PATIENTS WITH TYPE 2 MYOCARDIAL INFARCTION (TARGET-TYPE 2): A PILOT RANDOMISED CONTROLLED TRIAL</u>	Andrew Chapman	• Introduction: Type 2 MI, driven by oxygen supply-demand mismatch, lacks RCT-based management strategies. Imaging-guided, targeted intervention may address this gap. • Methodology: TARGET-Type 2 is a prospective, randomized, open-label, blinded-endpoint pilot trial assessing feasibility. Sixty adjudicated type 2 MI patients were randomized to complex intervention or standard care. Key outcomes included eligibility, intervention adherence, and 90-day clinical events. • Results: From 403 screened, 60 (mean age 70, 38% women) were randomized. Imaging and secondary prevention were frequently recommended in the intervention group, with 91% adherence. Fewer adverse events occurred vs. standard care (2 vs. 4 events at 90 days). • Conclusions: Recruitment and protocol adherence are feasible. A larger, powered trial is warranted to determine clinical efficacy of imaging-guided management in type 2 MI.



Notable Presentations at ACC 2025

Ischemic Heart Diseases (2/8)



Date	Title	Author	Summary
29 Mar 2025	<u>INTRAOPERATIVE REMOVAL OF TICAGRELOR IN PATIENTS UNDERGOING URGENT CABG: A POOLED ANALYSIS OF THE STAR-T RANDOMIZED TRIAL AND THE INTERNATIONAL STAR REGISTRY</u>	C. Michael Gibson	• Introduction: Ticagrelor increases bleeding risk in CABG; guidelines advise ≥ 3-day washout. The STAR-T trial and STAR-R registry evaluated intraoperative removal using a polymer bead device during CPB. • Methodology: A pooled analysis (n=213) compared device-treated patients (n=153) to STAR-T controls (n=60) undergoing isolated CABG. Primary endpoint: composite bleeding outcomes via hierarchical win ratio. Secondary: CTD volume and severe clinical bleeding events (SCBE). • Results: Device group had shorter washout (28.8 vs. 38.6 hrs, $p < 0.001$) yet showed significantly less bleeding (win ratio 1.72; 95% CI: 1.18–2.49; $p = 0.003$). CTD at 12h and 24h was markedly reduced. SCBE trended lower but not significant. • Conclusions: Intraoperative ticagrelor removal safely reduces perioperative bleeding severity, potentially enabling earlier CABG scheduling.
29 Mar 2025	<u>CLINICAL OUTCOMES WITH BETA BLOCKERS AFTER MYOCARDIAL INFARCTION: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Taimurzeb Durrani	• Introduction: While historical trials support beta-blocker use post-AMI, most predate modern reperfusion therapies. Current evidence in patients with preserved EF is uncertain • Methodology: A meta-analysis of 4 RCTs (n=9,928) comparing beta-blockers vs. control post-AMI was performed using Mantel-Haenszel random-effects modeling. Outcomes included mortality, HF, MI, and stroke. • Results: Beta-blockers showed no statistically significant benefit in all-cause mortality (RR: 0.97; $p = 0.86$), heart failure (RR: 1.31; $p = 0.53$), recurrent MI (RR: 0.95; $p = 0.65$), or stroke (RR: 1.34; $p = 0.57$). Mean follow-up: 2.72 years. • Conclusions: In the reperfusion era, beta-blockers confer no significant clinical advantage post-AMI, challenging their routine use in patients without reduced EF.



Notable Presentations at ACC 2025

Ischemic Heart Diseases (3/8)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY AND SAFETY OF IMPELLA IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION COMPLICATED BY CARDIOGENIC SHOCK: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Ogechukwu Obi	• Introduction: The mortality benefit of Impella in acute myocardial infarction complicated by cardiogenic shock (AMICS) remains uncertain • Methodology: A meta-analysis of 4 RCTs (n=442) comparing Impella versus standard care in AMICS. Outcomes: mortality (primary), bleeding, limb ischemia, stroke. Random-effects model with I² for heterogeneity. • Results: Impella reduced mortality (RR 0.81; 95% CI: 0.67–0.98; p=0.030; I²=0%) but increased major bleeding (RR 2.41; p=0.019) and limb ischemia (RR 4.48; p=0.030). Stroke rates were similar (p=0.422). • Conclusions: Impella use in AMICS lowers mortality but increases bleeding and vascular complications. Clinical use should balance survival benefit with bleeding risk.
30 Mar 2025	<u>SAFETY AND EFFICACY OF ACIPIMOX IN COMBINATION WITH STATINS IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION AND ELEVATED TRIGLYCERIDE LEVELS</u>	Tianshu Gu	• Introduction: Niacin derivatives in AMI remain controversial. This study assessed acipimox, a niacin analog, alongside statins in AMI patients with triglycerides >1.7 mmol/L. • Methodology: A retrospective cohort (n=38,193) from 82 Tianjin hospitals (2010–2024) evaluated acipimox plus statins vs. statins alone. Primary endpoint: 1-year MACCE; secondary: NACE. Propensity score matching and Cox regression adjusted for confounders. • Results: Only 625 patients received acipimox. This group showed significantly reduced 1-year MACCE (aHR: 0.68; p<0.001) and NACE (aHR: 0.71; p=0.002). Results were consistent across PSM and survival analyses. No significant differences in individual event components. • Conclusions: Acipimox added to statins reduced adverse cardiovascular events in AMI patients with elevated triglycerides, supporting its potential therapeutic role.



Notable Presentations at ACC 2025

Ischemic Heart Diseases (4/8)



Date	Title	Author	Summary
30 Mar 2025	<u>COMPARISON OF THE SAFETY AND EFFICACY BETWEEN TICAGRELOR AND CLOPIDOGREL IN MYOCARDIAL INFARCTION PATIENTS WITH FRAILITY : A MULTI-CENTER OBSERVATIONAL STUDY</u>	Rongxin Guo	• Introduction: Frailty worsens AMI prognosis, yet optimal antiplatelet therapy in this group remains unclear. This study compares ticagrelor vs. clopidogrel in frail AMI patients. • Methodology: A cohort of 38,500 frail AMI patients (2010–2024) from 82 hospitals was analyzed using HFRS. Patients received aspirin plus ticagrelor (n=6,995) or clopidogrel (n=31,505). Primary outcome: 1-year NACE (MACCE + BARC ≥ 3 bleeding). PSM and multivariate Cox regression adjusted for confounding. • Results: Ticagrelor significantly reduced MACCE (aHR: 0.836; $p < 0.001$) and NACE (aHR: 0.846; $p < 0.001$). Benefits persisted post-PSM (n=13,686). Kaplan-Meier curves confirmed reduced event rates in the ticagrelor group. • Conclusions: Ticagrelor offers superior efficacy and safety over clopidogrel in frail AMI patients, supporting its preferential use in this high-risk subgroup.
30 Mar 2025	<u>EFFICACY AND SAFETY OF DOACS VERSUS WARFARIN FOR TREATING LV THROMBUS IN POST-MI PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Thanaphat Thanyaratsarun	• Introduction: Optimal anticoagulation for LV thrombus post-MI remains undefined. This study evaluated the comparative efficacy and safety of DOACs versus warfarin. • Methodology: A systematic review of 10 studies (3 RCTs, 7 observational; n=14,914) assessed DOACs vs. warfarin in post-MI LV thrombus using a random-effects meta-analysis. • Results: DOACs significantly improved thrombus resolution (OR: 1.95; $p = 0.01$), reduced thromboembolic events (OR: 0.81; $p < 0.01$), and marginally lowered major bleeding risk (OR: 0.86; $p = 0.04$) compared to warfarin. • Conclusions: DOACs offer superior thrombus resolution with fewer embolic and bleeding events, supporting their role as a safe, effective alternative to warfarin in post-MI LV thrombus management.



Notable Presentations at ACC 2025

Ischemic Heart Diseases (5/8)



Date	Title	Author	Summary
30 Mar 2025	<u>ANTITHROMBOTIC STRATEGY FOR PATIENTS WITH CONCOMITANT CHRONIC CORONARY SYNDROME AND ATRIAL FIBRILLATION: A POOLED ANALYSIS OF 3 RANDOMIZED-CONTROLLED TRIALS</u>	Pei Lun Lee	• Introduction: Optimal antithrombotic therapy for patients with chronic coronary syndrome and atrial fibrillation (CCS-AF) remains uncertain, especially beyond 1 year post-revascularization. • Methodology: A random-effects meta-analysis of 3 trials (OAC ALONE, AFIRE, EPIC-CAD; n=3,945) compared oral anticoagulant (OAC) alone vs. OAC plus antiplatelet therapy. Outcomes included death, MI/in-stent thrombosis, ischemic stroke, embolism, and major bleeding. • Results: Combined therapy increased major bleeding (RR: 1.75; p<0.05) without improving overall effectiveness. However, in patients with PCI >1 year prior, it reduced MI/in-stent thrombosis risk (RR: 0.45), albeit with increased bleeding. No bleeding benefit was seen across subgroups, except females (HR: 0.99). • Conclusions: In CCS-AF, OAC monotherapy offers better safety with comparable efficacy. Combined therapy may benefit select post-PCI patients but warrants individualized risk stratification.
30 Mar 2025	<u>EFFICACY AND SAFETY OF ASPIRIN-FREE VS ASPIRIN-BASED STRATEGIES IN ACUTE CORONARY SYNDROME PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Abdullah Al Qaraghuli	• Introduction: While aspirin is foundational in ACS management, its role post-PCI in certain patients—especially those with high bleeding risk—has come under scrutiny. • Methodology: A meta-analysis of 30 studies (n=207,938) compared aspirin-free vs. aspirin-based strategies post-PCI in ACS. Relative risks (RR) with 95% CIs were pooled; models were selected based on heterogeneity (I²). • Results: Aspirin-free strategies significantly reduced all-cause mortality (RR: 0.93; p=0.024) and bleeding outcomes including BARC 2–5 (RR: 0.68), BARC 3/5 (RR: 0.71), TIMI major (RR: 0.66), and ISTH major (RR: 0.52), all with I²=0%. No significant differences were found in stroke, MI, MACCE, or stent thrombosis. • Conclusions: Aspirin-free strategies reduce mortality and bleeding without increasing ischemic events, supporting selective use in high bleeding risk ACS patients post-PCI.



Notable Presentations at ACC 2025

Ischemic Heart Diseases (6/8)



Date	Title	Author	Summary
30 Mar 2025	<u>AGE AND SEX DIFFERENCES IN THE EFFICACY OF EARLY INVASIVE STRATEGY FOR NON-ST-ELEVATION ACUTE CORONARY SYNDROME: A COMPARATIVE ANALYSIS IN STABLE PATIENTS</u>	Edina Cenko	• Introduction: Sex-specific outcomes in NSTEMI-ACS under varying initial strategies remain poorly defined. This study examined early revascularization (<24h) vs. conservative management across age and sex strata. • Methodology: Using the ISACS database, 7,589 stable NSTEMI-ACS patients (after key exclusions) were analyzed. Inverse probability of treatment weighting adjusted baseline characteristics. The primary outcome was 30-day all-cause mortality. • Results: Early invasive strategy reduced mortality in older women (3.0% vs. 5.1%; RR: 0.57), older men (3.1% vs. 5.7%; RR: 0.52), and younger men (0.8% vs. 1.7%; RR: 0.46). However, no mortality benefit was seen in younger women (2.0% vs. 0.9%; RR: 2.27). Subgroup effects were consistent across NSTEMI and high GRACE risk score populations. • Conclusions: Early revascularization improves 30-day survival in all but younger women with NSTEMI-ACS. Future work must refine risk stratification to guide individualized care in this subgroup.
30 Mar 2025	<u>COMPLETE PERCUTANEOUS REVASCLARIZATION IN STEMI PATIENTS WITH MULTIVESSEL DISEASE: A META-ANALYSIS AND META-REGRESSION OF CONTEMPORARY RANDOMIZED TRIALS</u>	Vishal Goel	• Introduction: In STEMI with multivessel disease (MVD), the impact of complete revascularization (CR) on hard endpoints like death or MI is debated, particularly regarding guidance by angiography vs. physiological assessment. • Methodology: A meta-analysis of 16 RCTs (n=15,160) compared CR vs. culprit-only revascularization (COR), including immediate vs. delayed CR. Primary outcome: composite of death or MI. Subgroup analysis by guidance strategy was performed. • Results: CR significantly reduced death/MI vs. COR (RR: 0.68). Angiography-guided CR showed a stronger benefit (RR: 0.57; p<0.05), while physiology-guided CR showed no significant advantage (RR: 0.74; p=0.06). Meta-regression linked age to higher death/MI and earlier CR to reduced ischemia-driven revascularization. • Conclusions: CR, especially angiography-guided, lowers death/MI in STEMI with MVD. Physiological guidance lacks clear benefit, warranting direct comparative trials to clarify its role.

Notable Presentations at ACC 2025

Ischemic Heart Diseases (7/8)



Date	Title	Author	Summary
31 Mar 2025	<u>UPDATED META-ANALYSIS OF RANDOMIZED TRIALS COMPARING COMPLETE VERSUS CULPRIT-ONLY REVASCULARIZATION IN PATIENTS WITH MYOCARDIAL INFARCTION AND MULTIVESSEL CORONARY DISEASE</u>	Hassan Kazmi	• Introduction: Optimal revascularization in MI patients with multivessel disease (MVD) undergoing PCI remains debated, given conflicting outcomes across clinical settings. • Methodology: Optimal revascularization in MI patients with multivessel disease (MVD) undergoing PCI remains debated, given conflicting outcomes across clinical settings. • Results: Complete revascularization significantly reduced MACE, cardiovascular death, MI, and ischemia-driven revascularization without increased safety risks. Benefits were prominent in males, non-elderly, non-diabetics, and angiography-guided PCI recipients. • Conclusions: Complete revascularization offers superior outcomes over culprit-only PCI in MI patients with MVD, without compromising safety—supporting its broader clinical adoption.
31 Mar 2025	<u>TRIAL SEQUENTIAL ANALYSIS OF THE EFFICACY AND SAFETY OF DUAL ANTIPLATELET THERAPY VERSUS ASPIRIN ALONE IN PATIENTS WITH STROKE: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Dang Nguyen	• Introduction: Given limited guidance, this study assesses dual antiplatelet therapy (DAPT) versus aspirin alone in ischemic stroke or TIA patients to inform clinical protocols. • Methodology: A systematic review and meta-analysis of five RCTs (n=27,563) across major databases was conducted. Pooled risk ratios with 95% CIs were calculated; trial sequential analysis (TSA) evaluated evidence sufficiency and minimized Type I/II errors. • Results: DAPT significantly reduced recurrent ischemic stroke (RR: 0.74) and MACE (RR: 0.77), but increased hemorrhagic stroke (RR: 2.13) and bleeding risk (RR: 2.21). TSA confirmed robustness of ischemic and bleeding endpoints. • Conclusions: DAPT lowers ischemic risk but elevates bleeding; evidence remains inconclusive for hemorrhagic stroke and mortality, warranting further trials.



Notable Presentations at ACC 2025

Ischemic Heart Diseases (8/8)



Date	Title	Author	Summary
31 Mar 2025	<u>POST-MYOCARDIAL INFARCTION BETA-BLOCKERS FOR PATIENTS WITHOUT REDUCED EJECTION FRACTION: A META-ANALYSIS OF CONTEMPORARY RANDOMIZED-CONTROLLED TRIALS</u>	Ishmun Chowdhury	• Introduction: Conflicting trial outcomes (REDUCE-AMI vs. ABYSS) prompted re-evaluation of beta-blocker (BB) use post-MI in patients with preserved ejection fraction (EF $\geq 40\%$). • Methodology: A meta-analysis of 3 open-label RCTs (2010–2023) including 9,512 patients assessed BB versus no BB post-MI. Primary outcome was MACCE; secondary outcomes included mortality, MI, stroke, and HF hospitalization • Results: BB use did not significantly reduce MACCE (RR: 0.91; CI: 0.80–1.05; $I^2 = 0\%$). No benefit was observed in all-cause or CV death, MI, stroke, or HF hospitalization. • Conclusions: Routine BB use post-MI in patients without reduced EF offers no clear benefit and should be reconsidered in contemporary practice.

Notable Presentations at ACC 2025

Pulmonary Vascular Disease (1/5)



Date	Title	Author	Summary
29 Mar 2025	<u>SAFETY AND EFFICACY OF TREPROSTINIL IN PULMONARY HYPERTENSION: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Nitish Behary Paray	• Introduction: Pulmonary arterial hypertension (PAH) remains a life-threatening condition with limited therapeutic options. Treprostinil, a prostacyclin analog, may offer functional and hemodynamic benefits • Methodology: A meta-analysis of 11 RCTs (n=2,757) evaluated treprostinil's efficacy and safety using a random-effects model. Outcomes included exercise capacity, cardiac function, symptom burden, and adverse effects. • Results: Treprostinil significantly improved 6-minute walking distance (MD: +18.45 m), cardiac index (MD: +0.27), and reduced Borg-Dyspnea Score (MD: -2.69). No significant difference was observed in NT-proBNP, clinical worsening, or mortality. Adverse events included vasodilation, headache, and GI symptoms. • Conclusions: Treprostinil improves exercise capacity and cardiac function in PAH without worsening survival, supporting its role in symptomatic management.
29 Mar 2025	<u>SOCIO-DEMOGRAPHIC DISPARITIES OF PREVALENCE AND INCIDENCE FOR PULMONARY ARTERIAL HYPERTENSION (PAH) IN ADOLESCENTS AND YOUNG ADULTS (15-39 YEARS) FROM 1990-2021: INSIGHTS FROM GLOBAL BURDEN OF DISEASE STUDY</u>	Sana Altaf	• Introduction: PAH data in youth (15–39 years) remain sparse. This study evaluates global trends across SDI regions. • Methodology: GBD data (1990–2021) were analyzed using Joinpoint Regression to assess PAH prevalence/incidence trends by SDI. AAPC and significance were calculated. • Results: Prevalence was highest in high-middle SDI (1.96), lowest in low-middle (1.37). AAPC was highest in middle SDI (+0.39, p<0.01); only low SDI declined (-0.30, p<0.01). Incidence peaked in low SDI (0.43) but declined (AAPC -0.36), while high-middle SDI rose most (+0.33, p<0.01). • Conclusions: Higher SDI regions show rising prevalence with better survival. Lower SDI regions may face underdiagnosis, needing improved healthcare access.



Notable Presentations at ACC 2025

Pulmonary Vascular Disease (2/5)



Date	Title	Author	Summary
29 Mar 2025	<u>DISPARITIES IN PULMONARY EMBOLISM-RELATED MORTALITY AMONG OBESE ADULTS IN THE UNITED STATES: A CDC WONDER DATABASE STUDY</u>	Muhammad Faiq Umar	• Introduction: Obesity elevates PE risk, but mortality trends in this group remain under-characterized. • Methodology: CDC WONDER data (1999–2019) were analyzed using ICD-10 codes (I26, E66). Variables included age, sex, race, region, and place of death. Results reported as AAMR. • Results: 32,821 deaths identified; AAMR doubled from 0.4 to 0.8. Females, non-Hispanics, and Blacks had higher AAMRs (0.7, 0.7, and 1.4, respectively). Highest state rate: D.C. (1.6); lowest: Virginia (0.3). Most deaths occurred in hospitals; age 45–54 most affected. • Conclusions: PE mortality is rising in obese adults, disproportionately impacting Black Americans. Urgent, targeted public health strategies are needed.
29 Mar 2025	<u>SOCIO-DEMOGRAPHIC INFLUENCE ON PULMONARY ARTERIAL HYPERTENSION: INSIGHTS FROM THE GLOBAL BURDEN OF DISEASE STUDY (1990–2021)</u>	Anand Reddy Maligireddy	• Introduction: PAH impacts youth globally, but socio-demographic drivers remain underexplored. • Methodology: GBD data (1990–2021) were used to evaluate PAH prevalence/incidence in 15–39-year-olds across SDI regions. AAPC was calculated via Joinpoint Regression ($p < 0.05$ significant). • Results: In 2021, prevalence was highest in high-middle SDI (1.96), lowest in low-middle (1.37). Middle SDI showed highest AAPC (+0.39), while low SDI declined (–0.30). Incidence was highest in low SDI (0.43) but dropped (–0.36); lowest in high SDI (0.23). • Conclusions: Higher SDIs show rising prevalence, likely due to better survival. Declines in low SDIs reflect underdiagnosis—highlighting a need for global diagnostic equity.

Notable Presentations at ACC 2025

Pulmonary Vascular Disease (3/5)



Date	Title	Author	Summary
29 Mar 2025	<u>IMPACT OF CMR ENRICHED PHENOMAPPING TO AUGMENT PROGNOSTIC RISK PROFILING ACROSS THE SPECTRUM OF PULMONARY VASCULAR DISEASE: RESULTS FROM THE PVDOMICS MULTICENTER STUDY</u>	Deborah Kwon	• Introduction: CMR offers detailed cardiac assessment in PH. This study evaluated whether unsupervised phenomapping enhances risk stratification. • Methodology: Using PVDOMICS data, 731 patients (453 PH, 196 comparators, 82 controls) underwent CMR. Latent class analysis (LCA) identified phenogroups; primary outcome was all-cause death. Decision tree analysis assessed predictive performance. • Results: LCA revealed 3 phenogroups with significantly different mortality risk ($p < 0.001$). Decision tree analysis predicted phenogroup assignment with 89% accuracy, offering a transparent classification model. • Conclusions: CMR-based phenomapping stratifies PH patients into risk-relevant subgroups. Coupling LCA with decision trees may optimize precision-guided care.
30 Mar 2025	<u>EVOLVING TRENDS IN PULMONARY EMBOLISM TREATMENT: OPPOSING RESULTS FROM PROPENSITY SCORE MATCHING AND SURVEY-WEIGHTED ANALYSES USING THE NATIONWIDE INPATIENT SAMPLE</u>	Chaudhry Saad Sohail	• Introduction: Massive PE has high fatality; this study compares mechanical thrombectomy (MT) and systemic thrombolysis (ST) outcomes. • Methodology: NIS data (2017–2020) analyzed PE patients with acute cor pulmonale treated with MT or ST. Propensity score matching (PSM) and survey-weighted (SVY) analysis assessed mortality, LOS, and hospital charges. • Results: MT use rose (317 to 1,369); ST cases slightly declined. PSM favored ST (lower mortality, LOS, and cost), but SVY linked ST to higher mortality (OR 1.76). Demographics (age, sex, race) influenced outcomes in both models. • Conclusions: Findings differ by analysis method. SVY suggests MT may offer survival benefit, warranting further cost-effectiveness research.



Notable Presentations at ACC 2025

Pulmonary Vascular Disease (4/5)



Date	Title	Author	Summary
30 Mar 2025	<u>VARIATIONS IN MANAGEMENT AND OUTCOMES OF PULMONARY EMBOLISM IN UNINSURED COMPARED WITH PRIVATELY INSURED INDIVIDUALS</u>	Mridul Bansal	• Introduction: Data on uninsured PE patients in the U.S. are limited. This study compares demographics, management, and outcomes by insurance status. • Methodology: NIS data (2016–2020) identified 300,019 PE admissions, excluding Medicare/Medicaid. Patients were grouped by uninsured (13.1%) vs. private insurance (86.9%). Key outcomes: mortality, intervention rates, resource use. • Results: Uninsured patients were younger, predominantly male, from minority groups, and lower-income areas. They received fewer catheter-based interventions and had higher mortality (aOR 1.26; p=0.03), longer stays, and higher costs. • Conclusions: Uninsured PE patients face worse in-hospital outcomes and care disparities, highlighting urgent need for equitable healthcare access and policy reform.
30 Mar 2025	<u>BURDEN OF PULMONARY ARTERIAL HYPERTENSION (PAH) ON WOMEN ACROSS REGIONS: MULTINATIONAL PATIENT QUALITATIVE STUDY</u>	Ioana Preston	• Introduction: PAH disproportionately affects women, but regional differences in burden are underexplored. • Methodology: A qualitative study of 20 women (ages 21–50) with PAH from the US, UK, Canada, Italy, and Germany used structured interviews. Thematic analysis compared US vs. EUCAN findings. • Results: High clinical, emotional, and maternity-related burden was universal. Depression (US: 78%, EUCAN: 86%) and self-education needs were common. Fewer US patients were referred for counseling (11% vs. 57%), and economic burden was higher in the US (56% vs. 14%). • Conclusions: Women with PAH face substantial global burden. Region-specific disparities warrant holistic, equitable, and gender-informed care strategies.



Notable Presentations at ACC 2025

Pulmonary Vascular Disease (5/5)



Date	Title	Author	Summary
30 Mar 2025	<u>RETROSPECTIVE ANALYSIS OF THE ADVERSE EVENTS REPORTED WITH NEWLY APPROVED FDA DRUG SOTATERCEPT: FDA ADVERSE EVENT REPORTING SYSTEM (FAERS) STUDY</u>	Pallavi Matai	• Introduction: Sotatercept improves exercise capacity in PAH. A clear safety profile is needed as it advances in clinical use. • Methodology: FAERS data up to June 2024 were analyzed for 11 reported adverse events (AEs). AEs were stratified by sex and age groups (18–64, 65–85, >85). Chi-square test assessed differences across organ systems. • Results: Most common AEs: flushing, diarrhea, cerebrovascular accident, neutropenia (all 18.18%). Majority occurred in ages 65–85 (54.55%). No significant difference in AE distribution across organ systems. • Conclusions: Sotatercept shows notable AEs, particularly in older adults. Ongoing monitoring and patient education are essential for safe integration into PAH care.
30 Mar 2025	<u>OUTCOMES OF MECHANICAL THROMBECTOMY VERSUS SYSTEMIC THROMBOLYSIS AMONG PATIENTS WITH PULMONARY EMBOLISM: A NATIONWIDE STUDY</u>	John Paul Aparece	• Introduction: Pulmonary embolism (PE) ranks as the third most common acute cardiovascular condition globally. Comparative outcome data for mechanical thrombectomy (MT) versus systemic thrombolysis (ST) remain limited. • Methodology: A retrospective analysis of the National Inpatient Sample (2016–2021) identified 53,710 PE hospitalizations using ICD-10 codes. Patients were stratified by MT (41%) vs. ST (59%). Primary outcome: in-hospital mortality; secondary: complications including cardiac arrest, shock, and bleeding. • Results: MT significantly reduced in-hospital mortality (6.9% vs. 16.5%; aOR=0.42; p<0.01), cardiac arrest, cardiogenic shock, ventilation need, intracranial hemorrhage, and acute kidney injury. ECMO use was higher with MT. No difference was observed in major bleeding or arrhythmia. • Conclusions: MT offers superior in-hospital outcomes over ST for PE, with markedly lower mortality and complication rates, supporting its role in advanced PE management.



Notable Presentations at ACC 2025

Valvular Diseases (1/8)



Date	Title	Author	Summary
29 Mar 2025	<u>NEW ORAL ANTICOAGULANT THERAPY VERSUS WARFARIN IN PATIENTS WITH MECHANICAL HEART VALVES: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Ogechukwu Obi	• Introduction: Vitamin K antagonists are standard for mechanical valve anticoagulation. NOAC efficacy and safety remain uncertain in this population. • Methodology: Three RCTs (n=1,159) comparing NOACs vs. warfarin were analyzed. Primary outcome: all-cause mortality. Random-effects model computed pooled risk ratios (RR); heterogeneity assessed via I². • Results: No significant differences were found for mortality (RR=0.47; p=0.348), major bleeding, TIA, MI, stroke, or valve thrombosis (RR=6.17; p=0.084). Heterogeneity varied by outcome (I²=0–69%). • Conclusions: NOACs did not demonstrate superior safety or efficacy over warfarin. Warfarin remains the standard in mechanical heart valve patients.
29 Mar 2025	<u>RATIO OF LEFT ATRIAL AND LEFT VENTRICULAR VOLUME PROGNOSTIC VALUE IN SIGNIFICANT ATRIAL SECONDARY MITRAL REGURGITATION</u>	Camille Sarrazyn	• Introduction: Atrial secondary mitral regurgitation (aSMR) is driven by left atrial (LA) remodeling, but left ventricular (LV) changes may be underestimated. This study assessed LA-to-LV volume ratio and outcomes. • Methodology: 449 aSMR patients were stratified by LAV/LVEDV ratio ≥ 0.88 vs. < 0.88. The primary endpoint was heart failure events or all-cause death over a median 69-month follow-up. • Results: Higher LAV/LVEDV ratio (≥ 0.88) was linked to worse outcomes (p<0.001). Multivariable Cox analysis confirmed its independent prognostic value (HR: 1.49; p=0.02), outperforming LA or LV volume alone. • Conclusions: LAV/LVEDV ratio enhances risk stratification in aSMR and may guide personalized management strategies.



Notable Presentations at ACC 2025

Valvular Diseases (2/8)



Date	Title	Author	Summary
29 Mar 2025	<u>SAFETY AND EFFICACY OF OUTPATIENT PARENTERAL ANTIBIOTIC THERAPY IN PATIENTS WITH INFECTIVE ENDOCARDITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Saifullah Khan	• Introduction: Outpatient Parenteral Antibiotic Therapy (OPAT) may reduce hospital burden in infective endocarditis (IE) while maintaining safety and efficacy. • Methodology: A meta-analysis of 25 studies (n=2,654) assessed OPAT outcomes in IE. Primary endpoints: mortality, relapse, readmission, and cardiac surgery. Random-effects modeling and sensitivity analysis were performed. • Results: Mortality was 0% during treatment and 5% during follow-up. Treatment-period readmission: 16%; relapse: 4%; surgery: 16%. Follow-up readmission: 19%; relapse: 2%; surgery: 14%. Sensitivity analyses confirmed result stability. • Conclusions: OPAT is a safe, effective IE treatment with low mortality and relapse rates, supporting its broader use in appropriate patient populations.
29 Mar 2025	<u>RECURRENT THROMBOSIS IN PATIENTS WITH MECHANICAL PROSTHETIC VALVE: 3-YEAR FOLLOW-UP OF A RANDOMIZED CONTROLLED TRIAL</u>	Yeganeh Pasebani	• Introduction: Long-term rethrombosis risk after thrombolytic therapy (TT) for mechanical prosthetic valve thrombosis (MPVT) is unknown. • Methodology: In a 3-year follow-up of 66 patients with successful TT from a prior RCT, outcomes included MPVT recurrence, INR control, warfarin adherence, and patient knowledge. • Results: Rethrombosis occurred in 27% (n=18), with multiple episodes in 4 patients. Prior MPVT (HR 6.01; p=0.004) and younger age (HR 0.93; p=0.01) predicted recurrence. Surveys indicated gaps in adherence and education. • Conclusions: Rethrombosis after TT is frequent. High-risk patients need intensified follow-up and education to optimize long-term outcomes.



Notable Presentations at ACC 2025

Valvular Diseases (3/8)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY OF ORAL ASPIRIN IN PREVENTION OF EMBOLIC EVENTS IN INFECTIVE ENDOCARDITIS: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Ernesto Calderon Martinez	• Introduction: Embolic events in infective endocarditis (IE) are common, but aspirin use is limited due to bleeding concerns. • Methodology: A meta-analysis of 5 studies (n=1,065) compared aspirin to placebo/no treatment. Outcomes included embolic events, bleeding, and mortality. PROSPERO-registered • Results: Aspirin reduced embolic events (RR: 0.61; p=0.004). No significant increase in bleeding (RR: 1.20; p=0.84) or mortality (RR: 1.18; p=0.08) was observed. Heterogeneity remained low to moderate. • Conclusions: Aspirin may reduce embolic risk in IE without raising bleeding, though potential mortality impact warrants further investigation.
29 Mar 2025	<u>VALVULAR HEART DISEASE IN RURAL COUNTIES: RESULTS FROM THE WILCOX AND OKTIBBEHA SITES OF THE RURAL COHORT STUDY</u>	Evangelia Alexopoulos	• Introduction: VHD disproportionately affects rural Southern populations. This study used AI-guided echocardiography via mobile units to assess VHD prevalence and risk. • Methodology: Cross-sectional RURAL Echo data (n=1,049) were analyzed by 10-year CVD risk (PREVENT score). Weighted logistic regression evaluated MVP and other VHD odds. • Results: MVP prevalence was low (1.8%), while other VHD was more common (12.2%), especially in high-risk groups (18% vs. 8%, OR ~6). MVP was not associated with risk scores; VHD was significantly more prevalent among Black participants in higher risk tiers. • Conclusions: AI-enabled MEUs reveal underrecognized VHD burden in high-risk rural populations. PREVENT score aids in early identification.



Notable Presentations at ACC 2025

Valvular Diseases (4/8)



Date	Title	Author	Summary
29 Mar 2025	<u>30-DAY CLINICAL OUTCOMES OF TRANSCATHETER AORTIC VALVE IMPLANTATION WITH BALLOON-EXPANDABLE VERSUS SELF-EXPANDING VALVES: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Ogechukwu Obi	• Introduction: Outcomes comparing balloon-expandable valves (BEV) and self-expanding valves (SEV) in small aortic annulus (SAA) TAVI patients remain unclear. • Methodology: A meta-analysis of 8 RCTs (n=3,134) compared BEV vs. SEV with 30-day outcomes. Key endpoints included mortality, bleeding, stroke, MI, and pacemaker implantation. • Results: BEV significantly reduced all-cause mortality (RR=0.60; p=0.029), life-threatening bleeding (RR=0.67; p=0.028), and permanent pacemaker implantation (RR=0.71; p=0.010). No significant differences were seen in CV death, stroke, MI, major bleeding, or vascular complications. • Conclusions: In SAA TAVI, BEV offers lower early mortality, bleeding, and pacemaker rates, supporting its use in selected patients.
30 Mar 2025	<u>IMPACT OF ATRIAL FUNCTIONAL MITRAL REGURGITATION AND EXERCISE-INDUCED CHANGES IN HEART FAILURE WITH PRESERVED EJECTION FRACTION</u>	Sebastiaan Dhont	• Introduction: Atrial functional mitral regurgitation (AFMR) is common in HFpEF and linked to adverse outcomes but remains understudied. • Methodology: In 429 HFpEF patients (mean age 73, 65% female), AFMR severity and dynamics were assessed using CPETechocardiography. Outcomes were tracked longitudinally. • Results: At rest, moderate/severe AFMR was present in 11% and independently predicted worse outcomes (HR 3.01; p<0.001). MR worsened during exercise in 36% and was associated with poorer prognosis (HR 2.69; p<0.001), beyond resting metrics. • Conclusions: AFMR is prevalent in HFpEF and worsens prognosis, especially when dynamic during exercise. CPETecho may enhance risk stratification.



Notable Presentations at ACC 2025

Valvular Diseases (5/8)



Date	Title	Author	Summary
30 Mar 2025	<u>FLAIL MITRAL LEAFLETS ARE ASSOCIATED WITH WORSE LONG-TERM PROCEDURAL OUTCOMES POST-TRANSCATHETER EDGE-TO-EDGE REPAIR AS COMPARED TO NON-FLAIL LEAFLETS</u>	James Swann	• Introduction: Data comparing flail vs. non-flail mitral leaflets post-MitraClip (TEER) are limited, particularly regarding recurrent MR and outcomes. • Methodology: A retrospective analysis of 126 TEER patients (2015–2023) compared flail (n=48) vs. non-flail (n=78) leaflet pathology. MR severity and outcomes were tracked through 1 year. • Results: Flail patients had higher recurrent MR (50% vs. 21.8%; p=0.002), more re-interventions (12.5% vs. 1.3%; p=0.023), and longer hospitalizations. The composite 1-year outcome showed a non-significant trend toward worse outcomes (aOR 2.07; p=0.08). • Conclusions: Flail leaflet pathology is linked to more recurrent MR and resource use post-TEER. Larger studies are needed to confirm long-term prognostic implications.
30 Mar 2025	<u>3-YEAR SURVIVAL AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT COMPARED TO THE GENERAL POPULATION</u>	Akiva Rosenzweig	• Introduction: Whether TAVR restores life expectancy in severe aortic stenosis remains unclear across age groups. • Methodology: Using TriNetX (2019–2024), 7,844 TAVR patients without prior surgeries were matched to the general population by age and comorbidities. Age groups: 50–65, 65–80, ≥80. 3-year survival was compared. • Results: Survival was lower post-TAVR for ages 50–65 (82.1% vs. 94.2%; HR 3.1; p<0.0001) and 65–80 (81.8% vs. 87.5%; HR 1.4; p<0.0001). For ≥80, survival matched the general population (77.3% vs. 78.9%; HR 1.0; p=0.87). • Conclusions: TAVR fully restores 3-year life expectancy in patients ≥80, with partial restoration in younger age groups.



Notable Presentations at ACC 2025

Valvular Diseases (6/8)



Date	Title	Author	Summary
30 Mar 2025	<u>COMPARATIVE EFFICACY OF THIRD-GENERATION SELF-EXPANDING TRANSCATHETER HEART VALVES: A NETWORK META-ANALYSIS</u>	Sahar Samimi	• Introduction: Third-generation self-expanding transcatheter heart valves (THVs) aim to minimize paravalvular leakage (PVL) and permanent pacemaker implantation (PPI), yet comparative data remain limited. • Methodology: A network meta-analysis of 14 studies (n=12,698) compared new self-expanding THVs. Outcomes: moderate/severe PVL and PPI. Frequentist random-effects modeling estimated odds ratios (ORs) with 95% CIs and P-scores. • Results: Navitor™ showed the lowest PVL risk (P-score=0.98), significantly outperforming Evolut™ Pro/Pro+ (OR=0.12) and Portico™ (OR=0.19). Acurate Neo™/Neo2™ had the lowest PPI risk (P-score=0.99), outperforming all comparators including Navitor™ (OR=0.26). • Conclusions: Navitor™ minimizes PVL; Acurate Neo™/Neo2™ reduces PPI risk. Head-to-head trials are needed to guide optimal THV selection.
30 Mar 2025	<u>LEFT ATRIAL REMODELING AND IMPAIRED CONTRACTILE FUNCTION IN PATIENTS WITH MITRAL VALVE PROLAPSE</u>	Ellen Kronzer	• Introduction: Left atrial (LA) myopathy is linked to mitral regurgitation (MR), but its role in mitral valve prolapse (MVP) without significant MR is unclear. • Methodology: Among 315 MVP patients and 62 controls, LA strain, emptying fraction (LAEF), and volume index (LAVI) were assessed by echocardiography. • Results: MVP patients—even with <mild MR—had larger LAVI, lower LAEF, and reduced strain vs. controls. >mild MR amplified these changes. MVP, older age, and lower mitral annulus e' velocity independently predicted reduced LA reservoir strain (≤20%). • Conclusions: MVP is associated with early LA remodeling, independent of MR severity, highlighting potential subclinical atrial dysfunction.



Notable Presentations at ACC 2025

Valvular Diseases (7/8)



Date	Title	Author	Summary
31 Mar 2025	<u>RAPID PROGRESSION OF AORTIC STENOSIS IN PATIENTS WITH TRANSTHYRETIN CARDIAC AMYLOIDOSIS: A COMPARATIVE STUDY</u>	Eun kyoung Kim	• Introduction: AS commonly coexists with TTR-CA, but its progression rate in this population remains unclear. • Methodology: Among 509 TTR-CA and 1,490 AS patients, 93 with serial TTEs were analyzed (25 TTR-CA + AS). Linear mixed-effect modeling and propensity score matching assessed AVA, indexed AVA, and DVI progression • Results: TTR-CA patients showed significantly faster AVA decline (-0.15 vs. -0.06 cm²/year, $p=0.001$), faster indexed AVA (-0.08 vs. -0.03, $p=0.006$), and DVI progression (-0.04 vs. -0.02, $p=0.024$). Findings were consistent in matched cohorts. • Conclusions: AS progresses nearly twice as fast in TTR-CA patients, warranting tailored surveillance strategies.
31 Mar 2025	<u>COMPARING WARFARIN AND DOACS IN PATIENTS WITH RHEUMATIC MITRAL VALVE DISEASE AND ATRIAL FIBRILLATION: AN EVIDENCE-BASED OUTCOME ANALYSIS</u>	Peter Oro	• Introduction: AF in rheumatic mitral valve disease (R-MVD) poses high thromboembolic risk. Warfarin is standard, but DOAC efficacy is unclear. • Methodology: A TriNetX-based retrospective cohort ($n=106,650$) compared DOACs vs. warfarin in R-MVD with AF. Propensity score matching balanced cohorts. Outcomes over 3 years: thromboembolic events, TIA/CVA, major bleeding, and mortality. • Results: DOACs showed lower risks: thromboembolic events (30.1% vs. 37.4%), TIA/CVA (16.1% vs. 20.9%), major bleeding (14.0% vs. 20.9%), and mortality (21.4% vs. 30.6%) (all $p<0.001$). • Conclusions: DOACs offer superior safety and efficacy over warfarin in R-MVD with AF, supporting their use in this high-risk group.



Notable Presentations at ACC 2025

Valvular Diseases (8/8)



Date	Title	Author	Summary
31 Mar 2025	<u>THE ONE-YEAR RESULTS OF THE TRANSCATHETER AORTIC VALVE REPLACEMENT COLLABORATION MODEL TO IMPROVE PATIENT OUTCOMES</u>	Mohammed Salih	• Introduction: TAVR outcomes vary widely. This study assessed whether system-wide standardization could improve patient survival. • Methodology: A collaborative was launched across six TAVR programs (Sept 2020). All TAVR cases from 2018–2022 (n=2,995) were reviewed. STS scores assessed risk; 1-year all-cause mortality was tracked pre- and post-collaboration. • Results: Despite more high-risk patients post-collaboration (15.3% vs. 13.1%; $p<0.01$), 1-year mortality declined 25.6% (10.36% to 7.71%; $P_{trend}<0.01$). All six sites showed mortality improvement. • Conclusions: System-wide standardization of TAVR care significantly reduced mortality and may serve as a replicable model for healthcare systems.

Notable Presentations at ACC 2025

Vascular Diseases (1/10)



Date	Title	Author	Summary
29 Mar 2025	<u>A PHASE 1, SINGLE ASCENDING DOSE STUDY TO EVALUATE THE SAFETY, TOLERABILITY, PHARMACOKINETICS, AND PHARMACODYNAMICS OF SRSD107 IN HEALTHY ADULT SUBJECTS</u>	Patrick Yue	• Introduction: SRSD107, an siRNA targeting FXI mRNA, may offer potent anticoagulation with reduced bleeding risk via selective FXI suppression. • Methodology: In a Phase 1, double-blind, placebo-controlled trial, 48 healthy adults received single ascending doses (15–600 mg) of subcutaneous SRSD107. Safety, pharmacokinetics (PK), and pharmacodynamics (PD) were assessed. • Results: SRSD107 was well tolerated; all AEs were mild/moderate. PK showed moderate absorption ($t_{\max}$: 2–4 h) and rapid elimination ($t_{1/2}$ ~6 h). FXI activity dropped >90% at higher doses, with sustained suppression ≥ 12 weeks. aPTT increased; PT unchanged. • Conclusions: SRSD107 demonstrated strong, durable FXI inhibition with a favorable safety profile, supporting further investigation as a long-acting anticoagulant.
29 Mar 2025	<u>30-DAY, 1-YEAR AND 2-YEAR CLINICAL OUTCOMES OF TRANSCATHETER AORTIC VALVE IMPLANTATION VERSUS SURGICAL AORTIC VALVE IMPLANTATION IN PATIENTS WITH SEVERE AORTIC VALVE STENOSIS AT LOW TO INTERMEDIATE SURGICAL RISKS: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Ogechukwu Obi	• Introduction: Comparative data on TAVI vs. SAVI in low-to-intermediate surgical risk patients remain limited. • Methodology: A meta-analysis of 9 RCTs (n=8,404) evaluated mortality and secondary outcomes over 2 years in severe aortic stenosis patients. • Results: No mortality difference was observed at 30 days, 1 year, or 2 years. TAVI reduced 30-day stroke, CV death at 1 year, MI, AKI, and atrial fibrillation across all timepoints. However, TAVI increased 30-day and 2-year permanent pacemaker implantation rates. • Conclusions: TAVI offers procedural advantages but does not improve survival in low-to-intermediate risk patients compared to SAVI.



Notable Presentations at ACC 2025

Vascular Diseases (2/10)



Date	Title	Author	Summary
29 Mar 2025	<u>ASSOCIATION OF TELOMERES LENGTH WITH CARDIOVASCULAR RISK FACTORS AND ARTERIAL STIFFNESS: THE CORINTHIA STUDY</u>	Dimitrios Tousoulis	• Introduction: Leukocyte telomere length (LTL) is a biomarker of biological aging linked to atherosclerosis and cardiovascular disease. • Methodology: In 419 Greek adults (mean age 62.4), LTL and carotid-femoral pulse wave velocity (cfPWV) were measured. Groups were stratified by median LTL to assess cardiovascular risk profiles. • Results: Lower LTL was associated with male sex, higher BMI, hypertension, dyslipidemia, and greater cfPWV (9.61 vs. 8.38 m/s; $p < 0.01$). LTL negatively correlated with cfPWV ($\beta = -0.096$; $p = 0.038$) after multivariate adjustment. • Conclusions: Shorter LTL correlates with increased arterial stiffness and clustering of cardiovascular risk factors, supporting its role in vascular aging.
29 Mar 2025	<u>SYSTOLIC BLOOD PRESSURE RELATED AORTIC ANEURYSM MORTALITY TRENDS IN THE US: A GENDER-BASED ANALYSIS FROM THE GLOBAL BURDEN OF DISEASE STUDY</u>	Sezan Vehbi	• Introduction: Elevated systolic blood pressure (SBP) is a key modifiable risk factor for aortic aneurysm (AA) mortality. Gender-specific trends remain underexplored. • Methodology: Using GBD data (1990–2021), Joinpoint regression assessed SBP-related AA mortality trends by gender via annual and average annual percent change (APC/AAPC). • Results: Mortality declined significantly overall in males (AAPC -3.93; $p < 0.001$) and females (AAPC -2.29; $p < 0.001$), with sharper reductions in males (AAPC difference: 1.64; $p < 0.001$). Rates plateaued in both genders post-2010. • Conclusions: While SBP-related AA mortality declined, recent stagnation—especially in females—signals a need for renewed, gender-specific blood pressure control strategies.



Notable Presentations at ACC 2025

Vascular Diseases (3/10)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY OF RENAL DENERVATION IN RESISTANT HYPERTENSION: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Abdul Mueez Alam Kayani	• Introduction: Renal denervation (RDN) reduces sympathetic activity and has shown promise in lowering blood pressure (BP). This meta-analysis evaluates RDN as adjunctive therapy in resistant hypertension. • Methodology: Eleven RCTs (n=1,315; mean age 56; 68% male) were analyzed using random-effects models to compare 24-hour ambulatory systolic and diastolic BP reductions versus medication alone. • Results: RDN significantly reduced 24-hour SBP (MD: -2.83 mmHg; p=0.003) and DBP (MD: -1.37 mmHg; p=0.007) over 12 months, demonstrating consistent efficacy across trials. • Conclusions: RDN modestly but significantly lowers BP in resistant hypertension and represents a viable adjunctive therapy for patients inadequately controlled with medications alone.
29 Mar 2025	<u>PRESERVING SPECIFICITY OF TRIAL ENDPOINTS AND CAUSE OF DEATH ATTRIBUTION IN CARDIOVASCULAR TRIALS: INSIGHTS FROM THE MARINER TRIAL</u>	Shea Hogan	• Introduction: The MARINER trial evaluating rivaroxaban post-discharge in medically ill patients did not meet its primary endpoint, partly due to broad definitions of VTE-related death. • Methodology: Blinded re-adjudication of 241 deaths used prespecified, stricter definitions. "Cannot rule out PE" deaths were reclassified, primarily as undetermined. Hazard ratios (HRs) for outcomes were recalculated. • Results: Re-adjudicated analysis showed stronger VTE mortality reduction with rivaroxaban (HR 0.46; 95% CI 0.23–0.91), compared to the original result (HR 0.76; 95% CI 0.52–1.1), aligning more closely with non-fatal VTE outcomes. • Conclusions: Refined endpoint definitions can improve trial accuracy and reduce type II error. Standardized VTE-death criteria across studies are warranted.

Notable Presentations at ACC 2025

Vascular Diseases (4/10)



Date	Title	Author	Summary
30 Mar 2025	<u>THE EFFECT OF FRAILITY ON THE EFFICACY AND SAFETY OF SURGICAL VS ENDOVASCULAR REVASCLARIZATION: A POST HOC ANALYSIS OF THE BEST-CLI TRIAL</u>	Darae Ko	• Introduction: Frailty is common in CLTI, but its role in guiding surgical vs. endovascular revascularization strategies remains unclear. • Methodology: Using a frailty index (FI ≥ 0.45 for severe frailty), outcomes were analyzed by treatment type in BEST-CLI cohorts: Cohort 1 (GSV available) and Cohort 2 (alternative conduit). Primary outcome: MALE or death; safety: MACE. • Results: Severe frailty was present in $\sim 48\%$ of patients. In Cohort 1, surgery significantly reduced MALE/death in both frail (HR 0.68) and non-frail (HR 0.68) groups with no MACE difference. In Cohort 2, no outcome difference was observed. • Conclusions: Frailty increases risk across all patients with CLTI. Surgical bypass offers superior limb and survival outcomes over endovascular therapy in frail and non-frail patients with suitable GSV.
30 Mar 2025	<u>EFFECTS OF THE GLP-1 RA SEMAGLUTIDE ON VASCULAR STRUCTURE AND FUNCTION IN PATIENTS WITH TYPE 2 DIABETES: RESULTS OF A PROSPECTIVE RANDOMIZED DOUBLE-BLIND PLACEBO-CONTROLLED STUDY</u>	Dennis Kannenkeril	• Introduction: Semaglutide improves cardiovascular outcomes in T2DM. This study tested whether it enhances vascular structure/function, focusing on pulse pressure as a marker of arterial compliance. • Methodology: In a double-blind RCT (N=91; NCT05303857), non-insulin-treated T2DM patients were randomized to semaglutide or placebo. Vascular parameters were assessed via office and 24h ambulatory pulse wave analysis over 16 weeks. • Results: Semaglutide significantly reduced central (-2.74 mmHg) and peripheral (-2.93 mmHg) pulse pressure vs. baseline and placebo. Pulse wave velocity also declined ($p < 0.001$ vs. placebo), along with significant reductions in body weight and HbA1c. • Conclusions: Semaglutide improves arterial compliance in T2DM, offering a potential mechanistic link to its observed cardiovascular benefits.



Notable Presentations at ACC 2025

Vascular Diseases (5/10)



Date	Title	Author	Summary
30 Mar 2025	<u>CLINICAL FEATURES AND OUTCOMES OF ACCESS-RELATED RADIAL ARTERY PSEUDOANEURYSM: A SINGLE CENTER STUDY</u>	Michael Vlach	• Introduction: Radial artery pseudoaneurysm (RAP) is a rare procedural complication with limited real-world data on presentation and management. • Methodology: Using natural language processing and chart review, 35 RAP cases were identified and analyzed for demographics, etiology, timing, symptoms, and treatment outcomes. • Results: Most RAPs followed coronary procedures (71.4%) and occurred in anticoagulated patients (60%). Median time to diagnosis was 13 days; only 40% were identified within 1 week. Compression was first-line (51.4%) but successful in only 50%, with smaller size and earlier presentation predicting success. Surgery had a 92% success rate. • Conclusions: RAP often presents late and in anticoagulated patients. Compression is effective for small, early-presenting RAPs; surgery remains highly reliable. Prospective studies are needed for optimized detection and treatment.
30 Mar 2025	<u>IMPACT OF LONG-TERM STEROIDS IN PATIENTS WITH PERIPHERAL VASCULAR DISEASE: A RETROSPECTIVE POPULATION-BASED STUDY</u>	Gabriel Alugba	• Introduction: The impact of long-term steroid (LTS) use in patients with peripheral vascular disease (PVD) remains unclear. • Methodology: The impact of long-term steroid (LTS) use in patients with peripheral vascular disease (PVD) remains unclear. • Results: LTS use was not significantly associated with critical limb ischemia (aOR 0.71; $p=0.74$), limb amputation (aOR 0.93; $p=0.58$), or mortality (aOR 0.87; $p=0.31$). The cohort was balanced by sex and predominantly Caucasian (83%). • Conclusions: LTS use in hospitalized PVD patients was not linked to adverse limb or mortality outcomes, suggesting a neutral clinical impact.



Notable Presentations at ACC 2025

Vascular Diseases (6/10)



Date	Title	Author	Summary
30 Mar 2025	<u>STUDY OF OPTIMIZED HEMOSTASIS AND REHABILITATION STRATEGIES FOR PREVENTION OF RADIAL ARTERY OCCLUSION AFTER RE-TRANSRADIAL INTERVENTION</u>	Hailong Si	• Introduction: Radial artery occlusion (RAO) is the most frequent complication post-transradial access (TRA). The standard PATENT protocol is effective but complex to implement widely. • Methodology: In 480 patients undergoing repeat TRA, four hemostasis strategies were compared: PATENT, PATENT + rehabilitation, optimized rapid decompression protocol (ORDP), and ORDP + rehabilitation (ORDPR). RA flow velocity and RAO were assessed by ultrasound/angiography. • Results: No major bleeding occurred. RAO at 1 month was significantly reduced in PATENT + rehab (1.7%) and ORDPR (0.8%) vs. PATENT (7.5%; $p=0.021$, $p=0.019$). ORDPR showed non-significant trend toward improved early RA flow. • Conclusions: ORDPR is a simpler, more effective hemostasis approach than PATENT, significantly reducing RAO and streamlining post-procedural care
30 Mar 2025	<u>A FIRST-IN-HUMAN PHASE I STUDY OF THE SAFETY, TOLERABILITY, PHARMACOKINETICS, AND PHARMACODYNAMICS OF REGN7544, A NOVEL NATRIURETIC PEPTIDE RECEPTOR 1-BLOCKING MONOCLONAL ANTIBODY</u>	Ethan Marin	• Introduction: Natriuretic peptides reduce blood pressure via NPR1 activation. The chronic impact of NPR1 blockade in healthy adults is unknown. • Methodology: In a Phase 1 RCT (NCT05970718), 80 healthy adults received single doses of REGN7544 (3–1000 mg IV or 100–600 mg SC) or placebo. Primary endpoint: treatment-emergent adverse events (TEAEs). • Results: REGN7544 raised BP by 5–10 mmHg, with dose-dependent duration (≥ 4 weeks). NT-proBNP increased and hemoglobin decreased, suggesting plasma volume expansion. TEAEs were similar between groups; no serious drug-related events occurred. • Conclusions: REGN7544 was well-tolerated and durably increased BP in healthy adults, supporting further development for hypovolemic or hypotensive conditions.



Notable Presentations at ACC 2025

Vascular Diseases (7/10)



Date	Title	Author	Summary
30 Mar 2025	<u>NEW-GENERATION MULTI-ELECTRODE CATHETER-BASED RADIOFREQUENCY RENAL DENERVATION FOR UNCONTROLLED HYPERTENSION: A META-ANALYSIS OF RANDOMIZED SHAM-CONTROLLED TRIALS</u>	Farah Yasmin	• Introduction: New-generation multi-electrode renal denervation (RDN) offers promising blood pressure (BP) reduction independent of medications in uncontrolled hypertension. • Methodology: A meta-analysis of 4 sham-controlled RCTs (n=1088) assessed RDN's efficacy in lowering 24-hour, office, daytime, and nighttime BP. Random-effects models were used to calculate mean differences (MDs). • Results: RDN significantly reduced 24-hour SBP (MD -5.99 mmHg; p=0.001) and DBP (-3.32 mmHg; p=0.0003), along with office SBP (-9.15), office DBP (-5.20), nighttime SBP (-5.50), and daytime SBP (-5.15); all p<0.05. • Conclusions: RDN effectively lowers BP across all settings in uncontrolled hypertension. Further large-scale trials are warranted to validate long-term safety and cardiovascular benefits.
30 Mar 2025	<u>SERUM SODIUM CONCENTRATION AND BRAIN ISCHEMIC LESIONS IN MRI: A SUB-ANALYSIS OF THE ACE CARDIOLINK-3 TRIAL</u>	Makoto Hibino	• Introduction: Serum sodium influences osmolality and brain cell volume. Its role in postoperative brain ischemia after aortic arch surgery is unclear. • Methodology: In the ACE CardioLink-3 trial (n=102), associations between preoperative sodium (continuous and tertiles) and new postoperative DWI brain ischemic lesions were analyzed. • Results: Median sodium was 139 mEq/L. Higher sodium (≥ 141 mEq/L) was linked to fewer severe lesions (OR per 1 mEq/L: 0.77 [0.73–0.94], Ptrend=0.020), independent of confounders. A spline curve confirmed the inverse relationship. • Conclusions: Higher pre-op sodium correlates with reduced brain ischemic lesion burden post-arch surgery. Further studies should explore sodium optimization as neuroprotection.



Notable Presentations at ACC 2025

Vascular Diseases (8/10)



Date	Title	Author	Summary
30 Mar 2025	<u>INCREASED VASCULAR VOLUMES IN RESPONSE TO TREATMENT WITH ULTRASOUND-ASSISTED, CATHETER-DIRECTED THROMBOLYSIS IN THE OPTALYSE PE TRIAL (OPTALYSE-3D)</u>	Farbod Rahaghi	Introduction: This study investigated whether catheter-directed thrombolysis or thrombectomy improves perfusion in pulmonary embolism (PE) by increasing small vessel volume. Methodology: CT-based vascular analysis was used to quantify small ($<5 \text{ mm}^2$, BV5) and medium ($<20 \text{ mm}^2$, BV20) vessel volumes in 57 OPTALYSE PE patients and 10 thrombectomy patients. Volumes were compared pre- and 48 hours post-intervention. Results: BV5 and BV20 significantly increased post-thrombolysis (BV5: $p=0.003$; BV20: $p<0.00001$), with no dose-dependent difference. In thrombectomy patients, only BV20 increased ($p=0.03$); BV5 did not ($p=0.63$). Conclusions: Catheter-directed thrombolysis improves microvascular perfusion post-PE, regardless of dose. Thrombectomy primarily improves medium vessel flow, highlighting differential impacts by modality.
31 Mar 2025	<u>INADEQUATELY CONTROLLED HYPERTENSION - PATIENT PROFILES IN USA AND UK: INSIGHTS FROM THE ENLIGHTN STUDY</u>	Vivek Bhalla	Introduction: Inadequately controlled hypertension (HTN) persists despite treatment, requiring better understanding of affected populations. Methodology: The EnligHTN study analyzed registry and claims data (2018–2023) from 46,376 HTN patients in the US and UK on ≥ 2 antihypertensives. Control defined as BP $>130/80$ mmHg (US) or $>140/90$ mmHg (UK) at ≥ 30 days. Results: Inadequate control was seen in 69% (US) and 70% (UK). US patients were younger (mean age 57 vs. 68 years), with more obesity (62% vs. 37%). Comorbidities were prevalent: diabetes, kidney disease, dyslipidemia, and IHD. Conclusions: Most patients on multidrug HTN therapy remain uncontrolled, underscoring a global need for improved hypertension strategies and comorbidity management.



Notable Presentations at ACC 2025

Vascular Diseases (9/10)



Date	Title	Author	Summary
31 Mar 2025	<u>DIFFERENTIAL RESPONSE BETWEEN AFRICAN AMERICANS AND NON-AFRICAN AMERICANS WITH RESISTANT HYPERTENSION TO MANP, A NOVEL GUANYLYL CYCLASE A-RECEPTOR ACTIVATOR: A PHASE 1B CLINICAL TRIAL</u>	Horng Chen	• Introduction: Resistant hypertension (RH) disproportionately affects African Americans (AA). MANP, an ANP analog, may offer enhanced BP control via cGMP activation. • Methodology: In a double-blind RCT (N=36; ~50% AA), patients received ascending subcutaneous doses of MANP (3–7 µg/kg) or placebo for 5 days. Endpoints: safety, cGMP levels, SBP, aldosterone. • Results: MANP was safe and well tolerated. cGMP and aldosterone suppression were dose-dependent, with trends favoring greater response in AA. SBP reductions peaked at –39.5 mmHg (Day 1, 7 µg/kg), with AA showing stronger responses than NAA in higher-dose cohorts. • Conclusions: MANP effectively lowers BP via cGMP activation, with promising enhanced response in AA patients. Further investigation is warranted.
31 Mar 2025	<u>INTERACTION OF AIR POLLUTION AND TELOMERES DNA LENGTH: THE CORINTHIA STUDY</u>	Dimitrios Tousoulis	• Introduction: Air pollution is linked to cardiovascular disease. This study examined how exposure to gaseous pollutants and leucocyte telomere length (LTL) relate to atherosclerosis. • Methodology: In 394 patients, LTL, carotid intima-media thickness (cIMT), plaque burden, and cfPWV were assessed. Participants were stratified into four groups by pollution level and LTL. • Results: Group 4 (high pollution/low LTL) had the highest cIMT (1.16 mm), plaque burden (39.6%), and cfPWV (10.18 mm/s), all p<0.001. These values were significantly worse than other groups, indicating additive vascular risk. • Conclusions: High air pollution combined with short LTL is associated with increased atherosclerotic burden, suggesting compounded cardiovascular risk.

Notable Presentations at ACC 2025

Vascular Diseases (10/10)



Date	Title	Author	Summary
31 Mar 2025	<u>TEMPORAL AND REGIONAL TRENDS IN AORTIC DISSECTION MORTALITY ASSOCIATED WITH PRIMARY HYPERTENSION IN ADULTS: A RETROSPECTIVE STUDY IN THE UNITED STATES FROM 1999 TO 2020</u>	Abbas Mallick	• Introduction: Hypertension increases aortic dissection (AD) risk, but its impact on AD-related mortality trends needs clarification. • Methodology: CDC WONDER data (1999–2020) was used to assess AD-related deaths in hypertensive adults (≥ 25 years). Joinpoint regression estimated AAMR trends, stratified by sex, region, and urbanicity. • Results: Among 13,128 deaths, AAMR declined (2006–2009), then rose (2009–2020). Males had higher AAMR (0.3) than females (0.2). Rural AAMR surpassed urban after 2009, rising sharply to 4.7 by 2020. Western states had highest AAMRs. • Conclusions: AD-related mortality in hypertensive adults is rising post-2009, especially in rural areas and males—underscoring the need for targeted prevention.

Notable Presentations at ACC 2025

Congenital Heart Disease (1/9)



Date	Title	Author	Summary
29 Mar 2025	<u>CARDIAC MYOSIN INHIBITORS FOR HYPERTROPHIC CARDIOMYOPATHY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Adeel Ahmad	• Introduction: Hypertrophic cardiomyopathy (HCM) presents significant functional and clinical challenges in young adults. Cardiac myosin inhibitors (CMIs) offer a novel targeted therapy, but efficacy and safety require robust synthesis. • Methodology: A meta-analysis of six RCTs (n=826) assessed CMIs' effects on LVOT gradients, NYHA class, peak oxygen uptake, SRT eligibility, and quality of life using random-effects modeling. • Results: CMIs significantly reduced LVOT gradients (rest: MD -39.3 mmHg; Valsalva: -49.0 mmHg), improved NYHA class (RR 2.21), peak VO₂, and KCCQ-CSS (+8.54 points), and reduced SRT eligibility (RR 0.26). Safety profiles were comparable to controls. • Conclusions: CMIs improve hemodynamic and functional outcomes in HCM without increased adverse effects, supporting their role in modern HCM management.
29 Mar 2025	<u>LARGE SCALE STUDY OF CONGENITAL HEART SURGERY AND OUTCOMES IN DIGEORGE SYNDROME WITH MATCHED CONTROLS USING NATIONAL DATABASE</u>	Elise Reddington	• Introduction: Long-term outcomes after congenital heart disease (CHD) surgery in DiGeorge Syndrome (DS) patients are poorly understood despite known perioperative complexity. • Methodology: Using the PHIS database, 3,283 DS patients undergoing common CHD surgeries were identified via ICD codes and compared 2:1 to matched non-DS controls. Outcomes included complications, readmissions, re-interventions, and long-term survival. • Results: DS patients had more postoperative complications, longer hospital stays, and higher 1-year readmission rates. Non-DS patients required more cardiac/non-cardiac re-interventions. Survival up to 15 years post-surgery was equivalent between groups. • Conclusions: Despite increased morbidity and readmissions, DS patients achieve similar long-term survival post-CHD surgery, supporting tailored perioperative care to mitigate early risks.



Notable Presentations at ACC 2025

Congenital Heart Disease (2/9)



Date	Title	Author	Summary
29 Mar 2025	<u>PEAK CARDIOPULMONARY EXERCISE PARAMETERS: A CASE-CONTROL STUDY OF SEMI-SUPINE RECUMBENT ERGOMETER VERSUS TREADMILL AND CYCLE ERGOMETER</u>	Julie Fernie	• Introduction: The semi-supine recumbent ergometer (RE) is widely used in pediatric stress echocardiography, but its effects on cardiopulmonary exercise parameters (CPEPs) remain unclear compared to standard ergometers. • Methodology: RE tests in children were matched by demographics to cycle ergometer (CE) and treadmill (TM) controls. CPEPs were compared using t-tests and Fisher's exact tests. • Results: CPEPs were similar between RE and CE, except for higher VE/VCO₂ on CE (p=0.038). Compared to TM, RE showed reduced VAT, peak VO₂, SpO₂, and VE. Ethnicity varied between RE and CE groups. • Conclusions: RE yields comparable CPEPs to CE, supporting CE-based normative substitution. Lower ventilatory efficiency on CE and reduced metrics vs. TM warrant further RE-specific validation.
29 Mar 2025	<u>OUTCOMES FOLLOWING SURGICAL REPAIR OF SINUS VENOSUS ATRIAL SEPTAL DEFECTS: RESULTS FROM THE WESTERN CANADIAN SINUS VENOSUS ASD REGISTRY</u>	Mathew Hindi	• Introduction: Sinus venosus atrial septal defects (SVASDs), representing 5–10% of ASDs, lead to significant hemodynamic sequelae. Surgical repair is standard, but long-term outcome data remain limited. • Methodology: A multicenter retrospective study across Western Canada analyzed 151 adult SVASD patients (127 surgically repaired) with a median 11.3-year follow-up. Primary outcome: all-cause mortality; secondary: arrhythmias, reintervention, and structural complications. • Results: Mortality was low (2.4%). Post-surgical complications included sinus node dysfunction (11.0%), pacemaker need (8.7%), RV failure (4.7%), and stroke (4.7%). Reoperation and residual defects occurred in 7.1%. Most patients (67.7%) remained in NYHA Class I. • Conclusions: Surgical SVASD repair demonstrates excellent long-term safety and efficacy, providing a benchmark for assessing future transcatheter approaches.



Notable Presentations at ACC 2025

Congenital Heart Disease (3/9)



Date	Title	Author	Summary
29 Mar 2025	<u>RIGHT AND LEFT VENTRICULAR REMODELING AFTER ATRIAL SEPTAL DEFECT CLOSURE</u>	Amr Saleh	• Introduction: Secundum atrial septal defects (ASDs) are the most common form of ASD, but data on biventricular remodeling post-closure from large multicenter cohorts remain limited. • Methodology: A secondary analysis of the GORE ASSURED trial echocardiographic core lab data evaluated baseline vs. 1-year post-ASD closure changes in RV and LV structure and function using paired t-tests. • Results: In 143 patients (41 adults, 102 pediatrics), RV basal and mid-cavity dimensions significantly decreased, while LV dimensions increased post-closure. Both RV and LV global longitudinal strain remained normal and unchanged. • Conclusions: ASD closure induces favorable reverse remodeling with reduced RV size and improved LV dimensions, while preserving myocardial function in both ventricles.
30 Mar 2025	<u>SEVERE MATERNAL CONGENITAL HEART DISEASE IS ASSOCIATED WITH ADVERSE FETAL OUTCOMES COMPARED TO VALVE OR SHUNT LESIONS</u>	Wendy Book	• Introduction: Pregnant women with congenital heart disease (CHD) face increased maternal risks, but the impact of CHD anatomic severity on fetal outcomes remains underexplored. • Methodology: A retrospective cohort (2010–2019) from a 7-site CDC-supported CHD surveillance project analyzed 12,938 pregnancies in 8,065 women with CHD, classified as severe, valve/obstructive, or shunt lesions. • Results: Fetuses of women with severe CHD had higher rates of fetal growth restriction (10.8%), preterm delivery (12.6%), and other adverse outcomes vs. valve (7.7%, 6.6%) and shunt lesions (5.6%, 7.2%) ($p < 0.001$). No difference was seen in fetal distress. • Conclusions: Severe CHD in pregnant women is associated with greater fetal morbidity. Tailored monitoring and preconception counseling are essential in this high-risk group.

Notable Presentations at ACC 2025

Congenital Heart Disease (4/9)



Date	Title	Author	Summary
30 Mar 2025	TRENDS IN TETRALOGY OF FALLOT-RELATED MORTALITY IN US BETWEEN 1999 AND 2020: A RETROSPECTIVE COHORT STUDY USING THE CDC WONDER DATABASE	Ahmed Kamal Siddiqi	• Introduction: Tetralogy of Fallot (ToF) is the most common cyanotic congenital heart defect. Understanding demographic and geographic mortality trends may guide targeted interventions. • Methodology: CDC WONDER death certificate data (1999–2020) were analyzed for crude and age-adjusted mortality rates (CMR, AAMR), with annual trends assessed via Joinpoint regression • Results: Among 5,523 ToF-related deaths, nearly 50% occurred in infancy. AAMR declined over time (AAPC: -1.26; $p=0.012$). Mortality was higher in males, NH Black individuals (AAMR 1.00 vs 0.83 in NH Whites), rural residents, and those in the Western U.S. Adults >45 years showed increasing mortality since 2013 ($p=0.047$). • Conclusions: ToF-related mortality has decreased overall but remains elevated in infants, men, NH Black populations, and rural areas—warranting focused public health efforts.
30 Mar 2025	PREVALENCE, CHARACTERISTICS, AND OUTCOMES OF ATRIAL FIBRILLATION IN ADULT CONGENITAL HEART DISEASE - A NATIONAL ANALYSIS IN THE UNITED STATES	Tochukwu Nzeako	• Introduction: Atrial fibrillation (AF) is increasingly recognized in adults with congenital heart disease (ACHD), yet its impact on clinical outcomes in this population is underexplored. • Methodology: Using the 2017–2019 National Inpatient Sample, 2,764,911 AF-related hospitalizations were analyzed. Patients were stratified by ACHD status. Multivariable regression adjusted for demographics and comorbidities assessed associations with clinical outcomes. • Results: ACHD was present in 0.4% of AF hospitalizations (prevalence: 1.5%). ACHD-AF patients were younger and had fewer comorbidities. AF in ACHD was linked to higher odds of acute heart failure (aOR 1.18), heart block (aOR 3.09), pacemaker use (aOR 3.15), procedures, and increased cost and length of stay—but lower in-hospital mortality (aOR 0.87). • Conclusions: AF in ACHD patients is associated with greater morbidity and healthcare utilization but paradoxically lower in-hospital mortality, highlighting the need for tailored arrhythmia management in this complex population.



Notable Presentations at ACC 2025

Congenital Heart Disease (5/9)



Date	Title	Author	Summary
30 Mar 2025	<u>LONG-TERM RISK OF CANCERS AMONG INFANTS WITH CONGENITAL HEART DISEASE: A POPULATION-BASED COHORT STUDY</u>	Rebecca Hsieh	• Introduction: Congenital heart disease (CHD) is associated with elevated cancer risk, but malignancy patterns in infants with CHD remain poorly defined. • Methodology: A matched cohort study (n=303,732) using data from 85 U.S. healthcare systems (2013–2023) assessed cancer risk in infants with CHD versus controls. Propensity matching adjusted for demographics, genetic syndromes, and malformations. Hazard ratios (HRs) were calculated using Cox regression. • Results: CHD was linked to significantly increased risks of hepatoblastoma (HR=7.94), AML (HR=9.99), Wilms tumor (HR=2.65), NHL (HR=2.31), and overall mortality (HR=9.97). Elevated risks were observed across solid and hematologic malignancies. • Conclusions: Infants with CHD are at markedly higher risk for multiple cancers and early mortality, underscoring the need for enhanced surveillance and genetic investigations.
30 Mar 2025	<u>UNIFIED ECG CRITERIA FOR DIAGNOSING ATRIAL AND VENTRICULAR DISEASES IN PEDIATRIC PATIENTS: THE CHILDHEART PROJECT</u>	Jose de Alencar	• Introduction: Adult-derived ECG criteria may not be appropriate for diagnosing chamber-specific heart disease in pediatric patients. This study evaluated new and existing ECG metrics to improve diagnostic accuracy. • Methodology: ECGs from 349 children with cardiac disease and 1,288 healthy controls (ages 0–14) were analyzed retrospectively. Cases were classified by chamber involvement (LAD, LVD, RAD, RVD). Multivariate logistic regression and ROC analyses assessed diagnostic performance. • Results: The CHILDHEART score showed high diagnostic accuracy for RAD (AUC=0.826) and RVD (AUC=0.84) in children under 3, with consistent performance across age groups. For LVD, the RI+RV6 >36 mm and SV3+SV4 ≥35 mm indices outperformed traditional criteria. • Conclusions: CHILDHEART score is effective for diagnosing RA and RV disease in children. Novel ECG indices enhance LVD detection, offering pediatric-specific diagnostic improvements.



Notable Presentations at ACC 2025

Congenital Heart Disease (6/9)



Date	Title	Author	Summary
30 Mar 2025	<u>ACCURACY OF NON-INVASIVE PULSE OXIMETRY COMPARED TO ARTERIAL BLOOD SATURATION MEASURED BY CO-OXIMETRY IN PEDIATRIC AND ADULT PATIENTS WITH AND WITHOUT HYPOXEMIA</u>	Lauren Littell	• Introduction: Accurate oxygen saturation assessment is critical in cyanotic heart disease. This study evaluated pulse oximetry (SpO₂) accuracy versus arterial co-oximetry (SaO₂) across saturation ranges • Methodology: In a retrospective analysis of 1,269 pediatric cardiac catheterization cases (2018–2024), simultaneous SpO₂ and SaO₂ readings were compared. Bias was assessed across SaO₂ strata and stratified by self-identified race. • Results: Pulse oximetry increasingly overestimated SaO₂ at lower saturations: mean bias was 4.4% in SaO₂ 70–80% and 9.1% in ≤70%. Bias ≥5% occurred in 46% (70–80%) and 89% (≤70%). Black patients had greater overestimation bias than White patients (1.2% vs -0.3%, p<0.01). • Conclusions: Pulse oximetry overestimates oxygen saturation in hypoxemic patients, especially at SaO₂ ≤80% and among Black patients. Further validation across age and skin tone is needed.
30 Mar 2025	<u>FETAL ATRIAL FUNCTION PLAYS LESS OF A ROLE IN THE EARLY GESTATION SINGLE VENTRICLE PATHOLOGY</u>	Ricky Liu	• Introduction: In early gestation, ventricular preload and cardiac output in fetuses with functional single ventricle (fSV) may rely more on ventricular contractility than atrial contribution, differing from normal physiology. • Methodology: Cross-sectional Doppler analysis of 17 fSV fetuses and 60 matched controls (12–15+6 weeks gestation) evaluated cardiac functional indices, notably the atrial to ventricular ejection force ratio (AVEFR), using peak velocities and VTIs. • Results: AVEFR was significantly lower in fSV fetuses than controls (2.48±0.82 vs. 3.45±1.05, p=0.003), driven by increased ventricular PVoutflow (38.2 vs. 30.7 cm/s, p=0.008), suggesting greater reliance on ventricular contractility. Other inflow/outflow parameters and diastolic indices showed no differences. • Conclusions: In early gestation, fetuses with fSV exhibit enhanced ventricular contribution to preload and output, indicating delayed reliance on atrial contraction compared to healthy fetuses.



Notable Presentations at ACC 2025

Congenital Heart Disease (7/9)



Date	Title	Author	Summary
30 Mar 2025	<u>EFFICACY OF GLUCAGON-LIKE-PEPTIDE-1 AGONISTS FOR WEIGHT LOSS IN ADULTS WITH CONGENITAL HEART DISEASE</u>	Prinston Varghese	• Introduction: GLP-1 agonists are effective for weight loss and cardiometabolic risk reduction, but their use in adults with congenital heart disease (CHD) remains unexplored. • Methodology: A retrospective review of 14 adults with CHD prescribed GLP-1 agonists between Jan 2022–Mar 2024 at Yale-New Haven Hospital assessed weight/BMI changes, adverse effects, and cardiovascular events. • Results: Patients (ages 25–65) had an average 5.3 kg weight loss and 2.0 kg/m² BMI reduction at 6 months. Three reported GI side effects (1 requiring medication change); no cardiovascular events occurred. Two Fontan patients were included. • Conclusions: GLP-1 agonists appear safe and effective for weight loss in adults with CHD, supporting larger prospective studies.
30 Mar 2025	<u>LONG-TERM OUTCOMES IN ADULTS LIVING WITH REPAIRED COARCTATION OF AORTA: RESULTS FROM THE NORTHERN ALBERTA ADULT COARCTATION REGISTRY</u>	Brody Jackson	• Introduction: Coarctation of the aorta (CoA) is a common congenital heart condition, and adults who have undergone repair are at elevated risk for various complications. This study aimed to develop a risk-stratification model to predict adverse outcomes in this population, thereby improving clinical surveillance and patient outcomes. • Methodology: A retrospective analysis was conducted using data from the Northern Alberta Adult Congenital Heart Disease Clinic, involving 297 adults with repaired CoA. The study examined patient demographics, intervention details, imaging data, and clinical outcomes. Major adverse cardiac events (MACE) were defined as a composite of significant cardiovascular complications, and Cox proportional hazards models were used to identify predictors of MACE. • Results: The cohort had a mean age of 39.6 years, and 28.96% of patients experienced a MACE during follow-up. Factors like older age, increased BMI, diabetes, and aortopathy were significantly associated with MACE. The risk prediction model that incorporated both clinical and imaging data had an AUC of 0.83, outperforming the clinical-only model (AUC = 0.77, p = 0.026). • Conclusions: The developed risk-stratification model holds promise for predicting MACE in adults with repaired CoA. Further prospective validation in larger cohorts is necessary to confirm its reliability and broader applicability.



Notable Presentations at ACC 2025

Congenital Heart Disease (8/9)



Date	Title	Author	Summary
31 Mar 2025	<u>RIGHT VENTRICULAR-PULMONARY ARTERIAL COUPLING IS ASSOCIATED WITH EXERCISE PERFORMANCE IN YOUTH WITH REPAIRED TETRALOGY OF FALLOT: A STRESS ECHOCARDIOGRAPHY PILOT STUDY</u>	Ariel Vargas	• Introduction: Right ventricular–pulmonary arterial coupling (RVPAC), impaired at rest in repaired tetralogy of Fallot (rTOF), has not been assessed during exercise despite its relevance to cardiac performance. • Methodology: In this pilot study, 17 rTOF patients underwent echocardiography and CPET at rest and peak exercise. RVPAC was calculated using RV global longitudinal strain (RVGLS) and RV pressure estimates (RVPE). % predicted VO₂ was the primary outcome. • Results: RVPAC declined significantly during exercise (0.40→0.19 %/mmHg; p<0.001). Higher RVPAC correlated with improved %mVO₂. Peak RVPE alone predicted lower exercise capacity, partially age-dependent. • Conclusions: Exercise-induced RV-PA uncoupling in rTOF impairs performance, highlighting a potential target for RV afterload modulation.
31 Mar 2025	<u>NON-VITAMIN K ANTAGONIST ORAL ANTICOAGULANTS FOR PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY AND ATRIAL FIBRILLATION: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Laibah Arshad Khan	• Introduction: Hypertrophic cardiomyopathy (HCM) with atrial fibrillation (AF) poses stroke and bleeding risks; optimal anticoagulation strategy remains unclear. • Methodology: A meta-analysis of five studies (n=6,848) compared NOACs vs. VKAs in HCM patients with AF. Outcomes included stroke, mortality, and major bleeding events. Random-effects models were used to pool risk ratios (RR). • Results: NOACs significantly reduced ischemic stroke (RR 0.50), all-cause mortality (RR 0.44), and intracranial hemorrhage (RR 0.42; p=0.002) versus VKAs. Other efficacy and safety endpoints showed no significant differences. • Conclusions: NOACs demonstrate superior efficacy and safety over VKAs in HCM with AF, supporting their preferential use in this high-risk population.



Notable Presentations at ACC 2025

Congenital Heart Disease (9/9)



Date	Title	Author	Summary
31 Mar 2025	<u>GLOBAL EPIDEMIOLOGY OF CONGENITAL HEART DISEASE AND ITS TREND FROM 1990-2021 IN G20 COUNTRIES: AN INSIGHT FROM GLOBAL BURDEN OF DISEASE STUDY 2021</u>	Mandeep Kaur	• Introduction: Congenital heart disease (CHD) remains a major contributor to morbidity and healthcare burden in G20 nations, with evolving epidemiological patterns over time. • Methodology: Using GBD 2021 data, CHD prevalence, incidence, mortality, and disability were analyzed across G20 countries by age, sex, and year from 1990–2021. • Results: Prevalence increased progressively across decades, particularly in females. Austria showed the highest APC in incidence (0.89%) and YLDs (0.59%). Other high-incidence countries included the UK, Croatia, Spain, and the US. CHD-related mortality declined over time. • Conclusions: CHD prevalence and disability are rising, with regional disparities. Declining mortality suggests improved survival but highlights unmet needs in lifelong CHD care.

Notable Presentations at ACC 2025

Cardiac Arrhythmias (1/11)



Date	Title	Author	Summary
29 Mar 2025	<u>COMPARISON OF CLINICAL OUTCOMES AFTER ATRIAL FLUTTER ABLATION BETWEEN AFRICAN AMERICAN AND NON-AFRICAN AMERICAN PATIENTS : A RETROSPECTIVE COHORT STUDY</u>	Ugochukwu Ebubechukwu	• Introduction: Catheter ablation is standard for atrial flutter, but post-procedural outcomes across racial groups remain underexplored. This study assessed one-year outcomes in African American vs. non-African American patients post-ablation • Methodology: A retrospective cohort analysis using TriNetX (2004–2024) included 9,180 patients post-atrial flutter ablation, matched 1:1 by propensity scores. Outcomes assessed included mortality, cardiovascular events, and hospitalization • Results: One-year mortality was similar (5.5% vs. 4.7%; $p=0.063$). African American patients had higher rates of new MI ($p<0.001$), ventricular arrhythmia ($p=0.006$), heart failure ($p<0.001$), and hospitalization ($p<0.001$). No difference in stroke or ICU admission. • Conclusion: While mortality was comparable, African American patients had significantly higher cardiovascular morbidity post-ablation, indicating a need for tailored post-procedural care
29 Mar 2025	<u>EXAMINING RACIAL OUTCOMES IN ATRIAL FIBRILLATION ABLATION: A FIVE-YEAR RETROSPECTIVE COHORT STUDY</u>	Colin McGuire	• Introduction: Atrial fibrillation (AF) ablation is effective but may yield disparate outcomes across racial groups. This study evaluated racial disparities in inpatient outcomes post-AF ablation. • Methodology: A retrospective analysis of 105,140 AF ablation hospitalizations from the National Inpatient Sample (2016–2020) assessed all-cause mortality and complications by race, using multivariable logistic regression. • Results: Among >4.8 million AF admissions, African Americans had significantly higher inpatient mortality than Whites (aOR 1.182; 95% CI 1.08–1.29; $p<0.001$). Other racial groups showed non-significant mortality trends. • Conclusion: African Americans undergoing AF ablation face elevated in-hospital mortality risk, underscoring the need for targeted strategies to address racial disparities in procedural care.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (2/11)



Date	Title	Author	Summary
29 Mar 2025	<u>INSULIN-LIKE GROWTH FACTOR-BINDING PROTEIN-7 (IGFBP7) AND RISK OF INCIDENT ATRIAL FIBRILLATION: RESULTS FROM THE PREVEND OBSERVATIONAL COHORT</u>	Navin Suthahar	• Introduction: Cellular senescence contributes to atrial fibrillation (AF) pathogenesis. IGFBP7, a senescence-associated protein, may serve as a novel biomarker for AF risk, though its role remains unestablished. • Methodology: In the PREVEND cohort (n=5,884, AF-free), IGFBP7 levels were measured at baseline. Incident AF was tracked via ECGs. Cox regression assessed the association between IGFBP7 and AF, adjusting for clinical covariates. • Results: Over 6.4 years, 154 participants developed AF (incidence: 4.3/1,000 person-years). Median IGFBP7 levels were significantly higher in those with AF ($p<0.001$). IGFBP7 predicted AF risk (adjusted HR: 1.27 per SD log increase; $p=0.016$). • Conclusion: Elevated IGFBP7 levels independently predict incident AF, highlighting its potential as a biomarker and therapeutic target in atrial fibrillation.
29 Mar 2025	<u>PREVALENCE OF ABNORMAL ECG FINDINGS IN ADOLESCENT FEMALE ATHLETES: A CROSS-SECTIONAL STUDY</u>	Douglas Corsi	• Introduction: Sex-specific data on ECG findings in young female athletes remain limited, despite established ECG interpretation criteria for youth sports populations. • Methodology: The HeartBytes database was analyzed for demographics, activity level, and ECG findings in 2,948 female athletes (median age 14). Chi-squared tests assessed associations with flagged ECGs. • Results: Among athletes, 4.2% had ECGs flagged for cardiologist review; 23% of these were deemed abnormal. Most participants (>81%) exercised >5 hrs/week. No significant association was found between abnormal ECGs and race or sport type ($p>0.05$). • Conclusion: This study highlights ECG traits in female youth athletes. Further research is needed to clarify whether abnormalities reflect physiological adaptation or underlying pathology.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (3/11)



Date	Title	Author	Summary
29 Mar 2025	<u>SAFETY OF CLASS IC VERSUS CLASS III ANTIARRHYTHMIC AGENTS IN PATIENTS WITH NON-ISCHEMIC CARDIOMYOPATHY: A RETROSPECTIVE MULTICENTER STUDY</u>	Ahmed Saleh	• Introduction: Non-ischemic cardiomyopathy (NICM) often coexists with atrial arrhythmias. Class IC antiarrhythmics are generally avoided in structural heart disease, yet their comparative safety in NICM remains uncertain • Methodology: Using the TriNetX database, NICM patients without VT/VF, ICD, or CAD on class IC (flecainide, propafenone) or class III (sotalolol, dofetilide, amiodarone) AADs were matched 1:1 (n=1,117/group). Cox regression assessed event-free survival over 5 years • Results: Both groups had similar AF prevalence (~76%). Class IC agents were associated with superior event-free survival from all-cause death, VT, VF, and cardiac arrest compared to class III AADs • Conclusion: In selected NICM patients, class IC AADs may offer a safer alternative to class III agents, challenging existing guidelines and warranting further investigation.
30 Mar 2025	<u>APIXABAN VERSUS RIVAROXABAN: 5-YEAR OUTCOMES IN ATRIAL FIBRILLATION MANAGEMENT</u>	Aravinthan Vignarajah	• Introduction: The comparative safety and efficacy of apixaban versus rivaroxaban in atrial fibrillation (AF) remain uncertain • Methodology: A retrospective cohort study using the TriNetX database (2012–2023) identified adults with AF treated with rivaroxaban or apixaban. After 1:1 propensity-score matching, 169,968 patients per group were analyzed. Outcomes assessed over 5 years included all-cause mortality, ischemic stroke/TIA, VTE, major bleeding, dementia, and heart failure (HF) admissions • Results: Rivaroxaban was associated with higher risks of all-cause mortality (OR 1.17), major bleeding (OR 1.12), VTE (OR 1.09), dementia (OR 1.10), and HF events (OR 1.02) compared to apixaban. Stroke/TIA (OR 0.97) and hospitalization (OR 0.99) risks were similar • Conclusion: Apixaban demonstrated a superior safety and mortality profile over 5 years compared to rivaroxaban in patients with AF.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (4/11)



Date	Title	Author	Summary
30 Mar 2025	<u>COMPARISON OF QTc, QTc-d AND QT DISPERSION IN PEDIATRIC LONG QT SYNDROME PATIENTS COMPARED TO NORMAL COHORT ON 24-HOUR CONTINUOUS HOLTER MONITORING</u>	Hadeel Allam	• Introduction: QTc dispersion (QTc-d) reflects repolarization heterogeneity and may be a predictor of arrhythmic risk in congenital long QT syndrome (LQTS) • Methodology: A single-center retrospective case-control study compared 24-hour Holter-derived QT metrics in 78 pediatric LQTS patients vs 158 age- and gender-matched controls. QTc-d was defined as the 24-hour max QTc minus min QTc. A genotype sub-analysis was performed • Results: LQTS patients had significantly longer QT (408 vs 358 ms; $p < 0.001$), QTd (132 vs 118 ms; $p = 0.009$), QTc (467 vs 429 ms; $p < 0.001$), and QTc-d (79 vs 58 ms; $p < 0.001$). Time spent with QTc > 460 ms was greater in LQTS (58% vs 3%; $p < 0.001$). QTc-d was highest in LQTS type 2. • Conclusion: QTc-d is significantly elevated in pediatric LQTS, particularly in type 2 genotype. Further studies are needed to evaluate its prognostic utility.
30 Mar 2025	<u>DIRECT ORAL ANTICOAGULANTS VERSUS VITAMIN K ANTAGONISTS IN PATIENTS WITH NONVALVULAR ATRIAL FIBRILLATION AND BIOPROSTHETIC AORTIC VALVE REPLACEMENT: REAL WORLD RESULTS FROM A LARGE INTEGRATED HEALTH CARE SYSTEM</u>	Tae Lee	• Introduction: Optimal anticoagulation strategy for patients with atrial fibrillation (AF) and bioprosthetic aortic valve replacement (BioAVR) remains uncertain, with limited data comparing DOACs and VKAs. • Methodology: A retrospective study of 525 BioAVR-AF patients on ≥ 1 year of anticoagulation (2011–2024) compared DOACs vs. VKAs. Outcomes included thromboembolic (efficacy) and ISTH-defined hemorrhagic events (safety), analyzed using chi-squared and Wilcoxon rank sum tests. • Results: Mean treatment duration was 5.4 years. Groups were balanced in age and CHA₂DS₂-VAsC scores. VKA patients had 59.7% mean time in therapeutic range. No significant differences were observed in thromboembolic or bleeding events between groups. • Conclusion: DOACs demonstrate comparable efficacy and safety to VKAs in patients with BioAVR-AF, supporting their use as a viable alternative in this population.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (5/11)



Date	Title	Author	Summary
30 Mar 2025	<u>EFFICACY OF CARDIOSELECTIVE BETA-BLOCKERS VERSUS DIHYDROPYRIDINE CALCIUM CHANNEL BLOCKERS IN MANAGING PREMATURE VENTRICULAR CONTRACTIONS: A PROPENSITY SCORE-MATCHED ANALYSIS</u>	Samuel Mensah	Introduction: Beta-blockers (BBs) and dihydropyridine calcium channel blockers (DHP CCBs) are commonly used for premature ventricular contractions (PVCs), but comparative efficacy data are limited. Methodology: A retrospective cohort analysis (2013–2024) using TriNetX included 17,010 matched PVC patients (BB: n=8,505; CCB: n=8,505). The primary outcome was a composite of death, ventricular tachycardia, systolic HF, antiarrhythmic drug use, and ICD placement. Results: No significant difference in the primary composite outcome (risk difference: 0.000; p=0.672) or individual endpoints. No antiarrhythmic initiation or ICD placements were recorded in either group. Conclusion: Cardioselective BBs and DHP CCBs show equivalent safety and efficacy in PVC management, supporting individualized therapy based on clinical context and tolerability.
30 Mar 2025	<u>IMPACT OF SODIUM GLUCOSE COTRANSPORTER-2 INHIBITORS ON POST-OPERATIVE ATRIAL FIBRILLATION IN CARDIOTHORACIC SURGERY: A MULTICENTER COHORT STUDY</u>	Mohanad Shehadeh	Introduction: SGLT2 inhibitors, established in heart failure and renal protection, have been proposed to reduce atrial fibrillation (AF) risk, but their role in preventing post-operative AF remains unclear. Methodology: A multicenter retrospective cohort study (n=2,240) assessed the incidence of AF within 30 days post-cardiothoracic surgery in SGLT2 inhibitor users vs matched non-users. Cox regression analysis adjusted for demographics. Results: Post-operative AF occurred less frequently in SGLT2 inhibitor users vs non-users (11.2% vs 13%; aHR=0.75; 95% CI: 0.61–0.91; p=0.004), with most patients undergoing CABG. Conclusion: SGLT2 inhibitor use is associated with a significantly lower risk of post-operative AF, supporting potential perioperative benefits.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (6/11)



Date	Title	Author	Summary
30 Mar 2025	<u>OUTCOMES AND PROCEDURAL SUCCESS OF LEFT ATRIAL APPENDAGE OCCLUSION IN PATIENTS AGED OVER 75 YEARS: A RETROSPECTIVE COHORT ANALYSIS</u>	Ritu Yadav	Introduction: Transcatheter left atrial appendage occlusion (LAAO) offers an alternative to anticoagulation in atrial fibrillation (AF), but outcomes in patients >75 years are underexplored. Methodology: This retrospective analysis included 723 AF patients who underwent LAAO between 2015–2023. The primary endpoint was 60-day major adverse cardiac events (MACE: mortality, stroke, major bleeding, readmissions). Outcomes were stratified by age >75 vs. ≤75 years. Results: Patients >75 years had significantly higher MACE (17.1% vs. 11.5%; OR 1.59; p=0.04), largely due to increased mortality (1.3% vs. 0%; p=0.04). Procedural success was also lower (92.2% vs. 96.2%; p=0.02). Other outcomes were similar. Conclusion: LAAO in patients >75 years is associated with higher short-term mortality and reduced procedural success, warranting careful risk-benefit assessment in this age group.
30 Mar 2025	<u>PATIENT PROFILE, FEASIBILITY, AND ACUTE SAFETY OF A SINOATRIAL NODE-SPARING HYBRID APPROACH FOR INAPPROPRIATE SINUS TACHYCARDIA (IST): FIRST RESULTS FROM AN INTERNATIONAL MULTI-CENTER IST PATIENT REGISTRY</u>	Dhanunjaya Lakkireddy	Introduction: Inappropriate sinus tachycardia (IST) is a challenging arrhythmia, often affecting young women, with limited response to medical therapy or catheter ablation. A novel sinoatrial node-sparing (SNS) hybrid ablation may offer a targeted interventional alternative. Methodology: In this international multicenter registry (N=112), patients underwent thoracoscopic SNS hybrid ablation combining epicardial bipolar radiofrequency lesions and endocardial touchups. Procedural details and acute safety outcomes were assessed. Results: Patients were predominantly female (94%), mean age 34±13 years. Lesions were placed at crista terminalis, IVC, and SVC in >94% of cases; endocardial touchups occurred in ~50–60%. Mean heart rate dropped from 93±17 to 75 bpm. Major adverse events occurred in 1.78%. Conclusion: SNS hybrid ablation is a feasible and acutely safe intervention for drug-refractory IST, with promising heart rate reduction and low procedural risk. Longer-term efficacy remains under investigation.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (7/11)



Date	Title	Author	Summary
30 Mar 2025	<u>SAFETY AND EFFICACY OF ORAL ANTICOAGULATION ALONE VS. ORAL ANTICOAGULATION PLUS SINGLE ANTIPLATELET THERAPY IN PATIENTS WITH ATRIAL FIBRILLATION AND STABLE CORONARY ARTERY DISEASE: AN UPDATED SYSTEMATIC REVIEW AND META ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Siddharth Agarwal	• Introduction: The optimal antithrombotic regimen for patients with stable coronary artery disease (CAD) and atrial fibrillation (AF) remains debated, particularly regarding the need for single antiplatelet therapy (SAPT) in addition to oral anticoagulation (OAC). • Methodology: A systematic review and meta-analysis of three randomized controlled trials (n=3,945) compared OAC alone (n=1,975) versus OAC+SAPT (n=1,970) in patients with stable CAD and AF. Risk ratios (RR) and absolute risk differences (ARD) were calculated using a random-effects model. • Results: OAC alone reduced major bleeding (RR 0.57; ARD 25 fewer/1,000) and gastrointestinal bleeding (RR 0.62; ARD 15 fewer/1,000) compared to OAC+SAPT, without increased ischemic risk. DOAC-only subgroup analysis showed reduced net adverse clinical events (RR 0.57). • Conclusion: In stable CAD with AF, OAC monotherapy lowers bleeding risk without compromising ischemic protection, supporting its use over OAC+SAPT.
30 Mar 2025	<u>SGLT2 INHIBITORS AND ARRHYTHMIA RISK IN HEART FAILURE: A META-ANALYSIS OF SEVEN DOUBLE-BLIND, PLACEBO-CONTROLLED RANDOMIZED TRIALS</u>	Suchith Boodgere Suresh	• Introduction: While sodium-glucose cotransporter-2 inhibitors (SGLT2i) improve outcomes in heart failure, their effects on cardiac arrhythmias remain unclear. • Methodology: A meta-analysis of seven RCTs (n=43,386) compared SGLT2i vs placebo in heart failure patients, assessing the risk of ventricular arrhythmias (VA), sudden cardiac death (SCD), atrial arrhythmias, and heart block. • Results: No significant differences were observed for VA (RR=1.01), SCD (RR=0.87), atrial arrhythmias (RR=0.88), or heart block (RR=0.93) between groups. Heterogeneity was low across most outcomes ($I^2=0\%$). • Conclusion: SGLT2i does not significantly reduce arrhythmia or conduction disturbances in heart failure. Further research is needed to define arrhythmic risk modifiers.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (8/11)



Date	Title	Author	Summary
30 Mar 2025	<u>SAFETY AND EFFICACY OF ORAL ANTICOAGULATION ALONE VS. ORAL ANTICOAGULATION PLUS SINGLE ANTIPLATELET THERAPY IN PATIENTS WITH ATRIAL FIBRILLATION AND STABLE CORONARY ARTERY DISEASE: AN UPDATED SYSTEMATIC REVIEW AND META ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Siddharth Agarwal	• Introduction: The optimal antithrombotic regimen for patients with stable coronary artery disease (CAD) and atrial fibrillation (AF) remains debated, particularly regarding the need for single antiplatelet therapy (SAPT) in addition to oral anticoagulation (OAC). • Methodology: A systematic review and meta-analysis of three randomized controlled trials (n=3,945) compared OAC alone (n=1,975) versus OAC+SAPT (n=1,970) in patients with stable CAD and AF. Risk ratios (RR) and absolute risk differences (ARD) were calculated using a random-effects model. • Results: OAC alone reduced major bleeding (RR 0.57; ARD 25 fewer/1,000) and gastrointestinal bleeding (RR 0.62; ARD 15 fewer/1,000) compared to OAC+SAPT, without increased ischemic risk. DOAC-only subgroup analysis showed reduced net adverse clinical events (RR 0.57). • Conclusion: In stable CAD with AF, OAC monotherapy lowers bleeding risk without compromising ischemic protection, supporting its use over OAC+SAPT.
30 Mar 2025	<u>SGLT2 INHIBITORS AND ARRHYTHMIA RISK IN HEART FAILURE: A META-ANALYSIS OF SEVEN DOUBLE-BLIND, PLACEBO-CONTROLLED RANDOMIZED TRIALS</u>	Suchith Boodgere Suresh	• Introduction: While sodium-glucose cotransporter-2 inhibitors (SGLT2i) improve outcomes in heart failure, their effects on cardiac arrhythmias remain unclear. • Methodology: A meta-analysis of seven RCTs (n=43,386) compared SGLT2i vs placebo in heart failure patients, assessing the risk of ventricular arrhythmias (VA), sudden cardiac death (SCD), atrial arrhythmias, and heart block. • Results: No significant differences were observed for VA (RR=1.01), SCD (RR=0.87), atrial arrhythmias (RR=0.88), or heart block (RR=0.93) between groups. Heterogeneity was low across most outcomes ($I^2=0\%$). • Conclusion: SGLT2i does not significantly reduce arrhythmia or conduction disturbances in heart failure. Further research is needed to define arrhythmic risk modifiers.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (9/11)



Date	Title	Author	Summary
31 Mar 2025	<u>ASYMPTOMATIC PERSISTENT ATRIAL FIBRILLATION PATIENTS BENEFIT FROM CATHETER ABLATION: INSIGHTS FROM DECAAF II</u>	Christian Massad	• Introduction: The benefit of catheter ablation in asymptomatic persistent atrial fibrillation (AF) remains unclear due to perceived absence of symptomatic burden. • Methodology: DECAAF II, a multicenter trial, randomized persistent AF patients to pulmonary vein isolation or fibrosis-guided ablation. Asymptomatic status was defined by a pre-ablation AFSS score of 0. SF-36 QoL changes and AF burden via smartphone ECG were analyzed. • Results: Among 796 patients, 6% were asymptomatic. AF recurrence (HR=0.99; p=0.9) and post-ablation burden were similar across groups. Asymptomatic patients showed QoL gains ($\Delta=2.42 \pm 10.55$), despite no baseline symptoms. • Conclusion: Ablation improves QoL in asymptomatic AF, suggesting unrecognized rhythm-related impairment and supporting rhythm control in this population.
31 Mar 2025	<u>CARDIAC RESYNCHRONIZATION THERAPY WITH TRIPLE FUSION COMPARED TO STANDARD BIVENTRICULAR PACING: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Eduardo Dan Itaya	• Introduction: Despite established use of biventricular (Bi-V) pacing in cardiac resynchronization therapy (CRT), up to 40% of patients exhibit suboptimal response. Triple-site ventricular (Tri-V) pacing is a proposed alternative. • Methodology: A meta-analysis of 6 RCTs (n=350) compared Tri-V vs. Bi-V CRT. Weighted mean differences (WMDs) were calculated for LVEF, LV volumes, QRS duration, and quality of life. • Results: Tri-V significantly improved LVEF (WMD +4.62%; p=0.02), reduced LV end-systolic volume (−18.08 mL; p=0.01), and enhanced quality of life (−7.77 points; p<0.01). No significant differences were observed for LV end-diastolic volume or QRS duration. • Conclusion: Tri-V pacing offers superior functional and symptomatic benefits over Bi-V in CRT recipients.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (10/11)



Date	Title	Author	Summary
31 Mar 2025	<u>COMPARATIVE OUTCOMES OF EARLY VERSUS DELAYED RESUMPTION OF DIRECT ORAL ANTICOAGULANTS IN PATIENTS WITH ATRIAL FIBRILLATION OR ATRIAL FLUTTER AFTER NON-MAJOR INTRACRANIAL HEMORRHAGE: A POPULATION-BASED COHORT STUDY</u>	Rebecca Hsieh	• Introduction: Optimal timing for resuming DOACs post-intracranial hemorrhage (ICH) in atrial fibrillation (AF)/flutter (AFL) remains undefined, despite known stroke prevention benefits. • Methodology: Using TriNetX (2010–2023), adults with AF/AFL and non-lobar, non-traumatic ICH were analyzed. Early (<1 week) vs. late (1–2 months) DOAC resumption cohorts (n=1,192 each) were propensity matched. Primary outcome: all-cause mortality; secondary: stroke, ICH, VTE, AMI, hospitalizations. • Results: Early resumption increased mortality (HR=1.33), breakthrough ICH (HR=1.37), ischemic stroke (HR=1.31), VTE (HR=1.63), and hospitalizations (HR=1.75). AMI and ischemic stroke (overall) risk were not significantly different. • Conclusion: Early DOAC resumption post-ICH in AF/AFL patients elevates adverse event risk, supporting delayed anticoagulation strategy.
31 Mar 2025	<u>COMPARATIVE OUTCOMES OF ORAL ANTICOAGULANTS IN PATIENTS WITH PORTAL HYPERTENSION AND NON VALVULAR ATRIAL FIBRILLATION: A RETROSPECTIVE COHORT STUDY</u>	Sanchaya Khetrupal	• Introduction: Managing anticoagulation in atrial fibrillation (AF) with concurrent portal hypertension (PH) is complex due to elevated bleeding risks; DOAC safety in this population remains underexplored. • Methodology: A 2013–2023 TriNetX retrospective cohort study analyzed adults with PH and non-valvular AF treated with apixaban, rivaroxaban, or warfarin. Propensity score matching enabled adjusted comparisons across cohorts for major bleeding, stroke, GI bleeding, ICH, hospitalization, and mortality. • Results: No significant differences in major bleeding or ischemic stroke between apixaban vs. rivaroxaban or warfarin. Rivaroxaban reduced bleeding risk vs. warfarin (OR 0.44; p=0.03). Apixaban trended toward lower hospitalization risk. • Conclusion: Rivaroxaban showed reduced bleeding risk; apixaban minimized hospitalizations, supporting individualized DOAC selection in PH with AF.



Notable Presentations at ACC 2025

Cardiac Arrhythmias (11/11)



Date	Title	Author	Summary
31 Mar 2025	<u>EFFICACY AND ERGONOMICS OF A NOVEL EXTERNAL COMPRESSION DEVICE VERSUS MANUAL COMPRESSION: THE LOCKET PHASE II STUDY</u>	Aashish Katapadi	• Introduction: Manual compression (MC) for venous access hemostasis is resource-intensive and delays ambulation. The LockeT device offers a potential alternative with improved efficiency. • Methodology: In this prospective, single-center trial, 97 patients (n=191 access sites) undergoing electrophysiology procedures were randomized 1:1 to LockeT or MC. Outcomes included hemostasis at 2 hours (HA2H), time to ambulation (TTA), same-day discharge (SDS), complications, and qualitative metrics. • Results: HA2H (99% vs. 95.5%) and SDS rates (23.5% vs. 36.0%) were similar. LockeT significantly reduced TTA (4.4 vs. 5.1 hrs; p=0.017) and groin hold time (5.0 vs. 39.4 min; p=0.001), with no major complications. • Conclusion: LockeT enables faster ambulation and reduced groin management time without compromising safety.
31 Mar 2025	<u>LONG-TERM OUTCOMES OF RIVAROXABAN VERSUS WARFARIN IN PATIENTS WITH END-STAGE RENAL DISEASE AND ATRIAL FIBRILLATION: A 1- AND 3-YEAR PROPENSITY-MATCHED ANALYSIS</u>	Rochell Issa	• Introduction: Rivaroxaban is not routinely recommended for atrial fibrillation (AF) in end-stage renal disease (ESRD) due to exclusion from prior trials; its real-world efficacy and safety remain unclear. • Methodology: Using TriNetX, 480 ESRD patients with AF were propensity-matched to receive rivaroxaban or warfarin. Outcomes over 1 and 3 years included ischemic stroke, major bleeding events (MBEs), and thromboembolic events (TBEs). • Results: Rivaroxaban significantly reduced ischemic stroke (8.3% vs. 17.5% at 1 year; 8.3% vs. 19.6% at 3 years), MBEs, and TBEs compared to warfarin (p<0.001). • Conclusion: Rivaroxaban offers superior long-term safety and efficacy over warfarin in ESRD patients with AF, challenging current prescribing restrictions.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (1/9)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY OF SODIUM-GLUCOSE COTRANSPORTER 2 INHIBITORS ALONG WITH COLCHICINE VERSUS COLCHICINE ALONE AMONG CORONARY ARTERY DISEASE PATIENTS - VAMSIKALYAN BORRA</u>	Vamsikalyan Borra	• Introduction: SGLT2 inhibitors (SGLT2i) and colchicine individually offer cardiovascular benefits, but their combined efficacy in coronary artery disease (CAD) remains understudied. • Methodology: Using TriNetX (2015–2023), 17,282 CAD patients on colchicine + SGLT2i were matched 1:1 to those on colchicine alone. Outcomes at 1 year included mortality, MACE, stroke, and atrial fibrillation (AF). • Results: Combination therapy significantly reduced all-cause mortality (RR 0.63; $p < 0.01$), MACE (RR 0.86), ischemic stroke (RR 0.79), and AF (RR 0.87). Heart failure and hemorrhagic stroke risks were similar between groups. • Conclusion: SGLT2i combined with colchicine significantly improves cardiovascular outcomes in CAD patients, supporting further prospective evaluation.
29 Mar 2025	<u>EFFICACY OF NEBIVOLOL/VALSARTAN COMBINED PILL FOR ANTI-HYPERTENSIVE THERAPY: A SYSTEMATIC REVIEW AND META-ANALYSIS - TALAL WARSI</u>	Talal Warsi	• Introduction: Nebivolol and valsartan are effective antihypertensives. Their combination may enhance blood pressure control compared to monotherapy or other dual therapies. • Methodology: A meta-analysis of 3 RCTs ($n=4,365$) compared the nebivolol/valsartan (N/V) pill to nebivolol, valsartan, or valsartan/amlodipine. Outcomes were mean differences in systolic (SBP) and diastolic (DBP) blood pressure. • Results: N/V significantly lowered SBP vs. nebivolol (MD: -2.67 mmHg) and valsartan/amlodipine (MD: -2.65 mmHg). DBP was significantly reduced vs. nebivolol (MD: -1.31 mmHg), but not vs. valsartan combinations. • Conclusion: N/V combination therapy improves SBP control and modestly lowers DBP. Larger studies are needed to assess safety, sex-specific effects, and long-term outcomes.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (2/9)



Date	Title	Author	Summary
29 Mar 2025	<u>DEFINITIVE THERAPEUTIC EFFICACY OF COLCHICINE FOR CARDIOVASCULAR DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS IN 80756 PATIENTS</u>	Christiany Tapia	• Introduction: Cardiovascular disease prevention is a global priority. Colchicine has emerged as a potential anti-inflammatory agent to reduce cardiovascular events in high-risk populations. • Methodology: A systematic review and meta-analysis of studies up to August 2024 (n=80,756) assessed colchicine's efficacy and safety. Outcomes included relative risks for cardiovascular events and adverse effects. • Results: Colchicine significantly reduced risks of MI (RR 0.90), pericarditis (RR 0.49), AF (RR 0.73), post-pericardiotomy syndrome (RR 0.44), ACS (RR 0.39), and hospitalizations (RR 0.33). Adverse effects included GI disorders, postoperative infection, and hepatotoxicity. • Conclusion: Colchicine reduces multiple cardiovascular events but requires vigilance regarding tolerability and hepatic safety.
29 Mar 2025	<u>TAFOLECIMAB IN CHINESE PATIENTS WITH DIABETES MELLITUS: A POOLED ANALYSIS OF EFFICACY AND SAFETY DATA FROM PHASE 3 RANDOMIZED, PLACEBO-CONTROLLED TRIALS</u>	Hua Shen	• Introduction: Tofolecimab, a PCSK9 inhibitor, has demonstrated lipid-lowering efficacy, but data in diabetic Chinese populations are limited. • Methodology: A pooled analysis of 3 Phase 3 RCTs evaluated tofolecimab 450 mg Q4W vs. placebo over 12 weeks in diabetic patients (n=259). The primary endpoint was LDL-C percentage change from baseline. • Results: Tofolecimab significantly reduced LDL-C by 64.02% vs. placebo (p<0.0001), with greater LDL-C target attainment (<1.8 mmol/L). It also improved non-HDL-C, Lp(a), triglycerides, and ApoB (all p<0.0001). Adverse events were mostly mild/moderate and comparable between groups. • Conclusion: Tofolecimab is highly effective and well-tolerated for lipid management in Chinese patients with diabetes mellitus.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (3/9)



Date	Title	Author	Summary
29 Mar 2025	<u>DEFINITIVE THERAPEUTIC EFFICACY OF COLCHICINE FOR CARDIOVASCULAR DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS IN 80756 PATIENTS</u>	Christiany Tapia	• Introduction: Cardiovascular disease prevention is a global priority. Colchicine has emerged as a potential anti-inflammatory agent to reduce cardiovascular events in high-risk populations. • Methodology: A systematic review and meta-analysis of studies up to August 2024 (n=80,756) assessed colchicine's efficacy and safety. Outcomes included relative risks for cardiovascular events and adverse effects. • Results: Colchicine significantly reduced risks of MI (RR 0.90), pericarditis (RR 0.49), AF (RR 0.73), post-pericardiotomy syndrome (RR 0.44), ACS (RR 0.39), and hospitalizations (RR 0.33). Adverse effects included GI disorders, postoperative infection, and hepatotoxicity. • Conclusion: Colchicine reduces multiple cardiovascular events but requires vigilance regarding tolerability and hepatic safety.
29 Mar 2025	<u>TAFOLECIMAB IN CHINESE PATIENTS WITH DIABETES MELLITUS: A POOLED ANALYSIS OF EFFICACY AND SAFETY DATA FROM PHASE 3 RANDOMIZED, PLACEBO-CONTROLLED TRIALS</u>	Hua Shen	• Introduction: Tafolecimab, a PCSK9 inhibitor, has demonstrated lipid-lowering efficacy, but data in diabetic Chinese populations are limited. • Methodology: A pooled analysis of 3 Phase 3 RCTs evaluated tafolecimab 450 mg Q4W vs. placebo over 12 weeks in diabetic patients (n=259). The primary endpoint was LDL-C percentage change from baseline. • Results: Tafolecimab significantly reduced LDL-C by 64.02% vs. placebo (p<0.0001), with greater LDL-C target attainment (<1.8 mmol/L). It also improved non-HDL-C, Lp(a), triglycerides, and ApoB (all p<0.0001). Adverse events were mostly mild/moderate and comparable between groups. • Conclusion: Tafolecimab is highly effective and well-tolerated for lipid management in Chinese patients with diabetes mellitus.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (4/9)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY OF A NOVEL CXCR7 AGONIST IN RAT ISCHEMIA REPERFUSION INDUCED MYOCARDIAL INFARCTION MODEL</u>	Yunhee Kim	• Introduction: Cardiac fibrosis, driven by maladaptive ECM remodeling, contributes to myocardial dysfunction post-infarction. CXCR7 signaling may promote cardioprotection, yet no CXCR7 agonists have shown therapeutic potential in vivo. • Methodology: In a rat ischemia-reperfusion (I/R) model, IL21120038 (CXCR7 agonist) was administered at 10, 30, or 60 mg/kg either acutely (24 hrs) or chronically (21 days). Infarct size, ejection fraction (EF), collagen volume fraction (CVF), and inflammation were evaluated. • Results: IL21120038 reduced infarct size (from 56% to ~24%) across all doses at 24 hrs. After 21 days, EF improved significantly in all treatment arms. CVF and inflammation were also reduced, indicating anti-fibrotic effects. • Conclusion: IL21120038 is the first CXCR7 agonist to demonstrate cardioprotective, anti-fibrotic, and functional benefits in a myocardial infarction model, supporting further translational development.
30 Mar 2025	<u>WHO WINS THE WAR AGAINST DIABETES? COMPARATIVE EFFICACY OF TIRZEPATIDE, SEMAGLUTIDE, AND PLACEBO IN DIABETES CONTROL: A NETWORK META-ANALYSIS</u>	Ramon Huntermann	• Introduction: Incretin-based therapies such as Semaglutide (SEMA) and Tirzepatide (TZP) are effective in type 2 diabetes (DM2), but their comparative glycemic efficacy remains uncertain. • Methodology: A meta-analysis of 12 RCTs (n=6,941) evaluated TZP 15 mg and SEMA 2.4 mg versus placebo on HbA1c and fasting glucose. Indirect comparison using the Bucher method assessed relative efficacy. • Results: Both TZP and SEMA significantly reduced HbA1c and fasting glucose vs placebo ($p < 0.0001$). Indirect analysis showed TZP superiority over SEMA in lowering HbA1c (MD -0.72; $p = 0.033$) and fasting glucose (MD -28.63 mg/dL; $p = 0.012$). • Conclusion: While both agents are effective, TZP provides greater glycemic control than SEMA in patients with DM2.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (5/9)



Date	Title	Author	Summary
30 Mar 2025	<u>COMPARATIVE EFFICACY OF TIRZEPATIDE, SEMAGLUTIDE, AND PLACEBO IN WEIGHT MANAGEMENT: A NOVEL NETWORK META-ANALYSIS</u>	Victor Gomez	• Introduction: Incretin-based therapies such as tirzepatide (TZP) and semaglutide (SEMA) have shown promise in obesity management, but comparative efficacy remains unclear. • Methodology: A meta-analysis of 18 RCTs (N=9,858; 60% women; mean age 53.0 years) compared TZP 15 mg and SEMA 2.4 mg against placebo. Primary outcomes were weight, percent body weight, and waist circumference reduction. Bucher indirect comparison assessed head-to-head efficacy. • Results: Both TZP and SEMA significantly outperformed placebo in all weight-related metrics. Indirect comparison favored TZP over SEMA (weight: -0.47 kg; % weight: -6.84%; waist: -2.09 cm), but differences were not statistically significant. • Conclusion: While TZP demonstrated numerically greater weight reduction than SEMA, no statistically significant differences were observed between the agents.
30 Mar 2025	<u>COMPARATIVE EFFICACY AND SAFETY OF RASIS WITHHOLDING VERSUS RASIS CONTINUING BEFORE SURGERIES: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Khaled Ali	• Introduction: Preoperative hypotension is a critical concern, yet optimal perioperative management of renin-angiotensin system inhibitors (RASIs) remains unclear. • Methodology: A meta-analysis of 12 randomized controlled trials assessed the impact of withholding versus continuing RASIs before surgery, with outcomes measured for hypotension, hypertension, and mortality. • Results: Withholding RASIs reduced hypotension risk (RR: 0.78; 95% CI: 0.72–0.85) and severe hypotension during anesthesia induction (RR: 0.47; 95% CI: 0.23–0.96). Hypotension duration was shorter (MD: -17.34 min). No significant differences were observed in hypertension (RR: 1.26) or all-cause mortality (RR: 0.86). • Conclusion: Withholding RASIs preoperatively significantly lowers peri-induction hypotension risk without increasing mortality.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (6/9)



Date	Title	Author	Summary
30 Mar 2025	<u>COMPARATIVE EFFICACY, SAFETY, AND LONG-TERM OUTCOMES OF INJECTABLE CHOLESTEROL-LOWERING AGENTS: A NETWORK META-ANALYSIS OF ALIROCUMAB, EVOLOCUMAB, INCLISIRAN, AND MIPOMERSEN</u>	Rakhshanda Khan	• Introduction: Atherosclerotic cardiovascular disease (ASCVD) remains the leading cause of death globally. Despite statins being first-line treatment for lowering LDL cholesterol (LDL-C), many patients either fail to reach target levels or cannot tolerate statins. PCSK9 inhibitors offer an effective alternative or adjunct to statins. • Methodology: A systematic review was conducted across multiple databases, with risk of bias assessed using ROB 2.0. • Results: PCSK9 inhibitors, including Alirocumab, Evolocumab, Bococizumab, and Inclisiran, significantly reduced LDL-C levels by over 60%. These agents consistently lowered LDL-C and reduced major cardiovascular events, including myocardial infarction and stroke. Safety profiles were favorable, with minimal adverse events. • Conclusion: PCSK9 inhibitors, especially Alirocumab and Evolocumab, significantly reduce LDL-C and lower cardiovascular event risks. These agents are safe and effective adjuncts to statin therapy in high-risk patients, with promising potential for improving long-term cardiovascular outcomes. Further studies are needed to assess their long-term cost-effectiveness and broader clinical impact.
31 Mar 2025	<u>METANALYSIS OF EFFICACY OF RENAL DENERVATION - AN UP-TO-DATE METANALYSIS</u>	Mounica Vorla	• Introduction: The comparative effectiveness of renal denervation (RDN) devices on post-procedural blood pressure (BP) reduction remains uncertain. • Methodology: A systematic review of clinical trials through September 2024 evaluated mean changes in office and ambulatory systolic/diastolic BP post-RDN. RevMan 5.4 was used for meta-analysis. • Results: The Simplicity Spyral RDN device significantly reduced ambulatory diastolic BP (MD -1.45 mmHg; 95% CI -2.7 to -0.4; P=0.02). No significant BP differences were observed across device types. • Conclusion: Simplicity Spyral RDN shows modest diastolic BP reduction; longer-term comparative outcome data are needed to determine clinical utility.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (7/9)



Date	Title	Author	Summary
31 Mar 2025	<u>SAFETY AND EFFICACY OF VERY LOW LDL-CHOLESTEROL INTENSIVE LOWERING WITH PCSK-9 INHIBITORS</u>	Akshay Machanahalli Balakrishna	• Introduction: The safety of achieving very low LDL-C (<40 mg/dL) with PCSK-9 inhibitors remains debated despite their proven cardiovascular efficacy. • Methodology: A systematic review and meta-analysis of 6 RCTs (n=52,951) compared outcomes in patients reaching very low LDL-C with PCSK-9 inhibitors versus higher LDL-C controls. A random-effects model assessed safety and efficacy endpoints. • Results: Very low LDL-C was not associated with increased adverse events, diabetes, cataracts, muscle or neurocognitive disorders (P>0.05). Major adverse cardiovascular events were significantly reduced (OR 0.77; P<0.05). • Conclusion: Achieving very low LDL-C with PCSK-9 inhibitors is safe and confers significant cardiovascular benefit without increased adverse risk.
31 Mar 2025	<u>THE EFFICACY AND SAFETY OF LOW-DOSE TRIPLE SINGLE-PILL COMBINATION FOR HYPERTENSION TREATMENT: A SYSTEMATIC REVIEW AND META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Abdalhakim Shubietah	• Introduction: Low-dose triple single-pill combination (LDTc) therapy offers a potentially effective and safe approach to managing hypertension (HTN). • Methodology: A meta-analysis of five RCTs (n=1,719) evaluated LDTc's efficacy and safety using risk ratios and mean differences for BP outcomes over 4–12 weeks. • Results: LDTc significantly reduced systolic BP (MD: –8.8 mmHg) and diastolic BP (MD: –4.52 mmHg) at both timepoints (p<0.01). It improved BP target achievement (RR: 1.56) without increasing serious adverse events or treatment discontinuation (p>0.5). • Conclusion: LDTc is a highly effective and well-tolerated antihypertensive strategy, supporting broader implementation in clinical practice.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (8/9)



Date	Title	Author	Summary
31 Mar 2025	<u>EVALUATING THE EFFICACY OF DIFFERENT POLYPILL COMBINATIONS FOR PRIMARY AND SECONDARY CARDIOVASCULAR DISEASE PREVENTION: A META-ANALYSIS</u>	Habib Yazgi	• Introduction: Cardiovascular mortality is driven by hypertension, high LDL-C, and poor medication adherence. Polypills may improve adherence and reduce risk, but optimal formulations remain undefined. • Methodology: A meta-analysis of 32 studies (n=50,000) across five continents assessed polypill combinations on MACE, CV mortality, total mortality, BP, and LDL-C. Random-effects models generated pooled risk ratios (RRs). • Results: Polypills with ≥ 4 drugs reduced MACE by 21% (RR=0.79), particularly those including aspirin, diuretics, and moderate/high-intensity statins (RR=0.84). Diuretic-containing regimens lowered systolic BP by 5 mmHg. Overall, polypills reduced MACE risk by 20% (RR=0.80). • Conclusion: Optimized multi-drug polypills significantly improve CV outcomes and should be prioritized in prevention strategies.
31 Mar 2025	<u>EFFICACY AND SAFETY OF ANTISENSE OLIGONUCLEOTIDE THERAPIES TARGETING APOCIII IN PATIENTS WITH SEVERE HYPERTRIGLYCERIDEMIA: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Muhammad Ahmad Qureshi	• Introduction: Hypertriglyceridemia (HTG) elevates cardiovascular and pancreatitis risk. Antisense oligonucleotides (ASOs) targeting APOC3 mRNA, like Volanesorsen and Olezarsen, reduce ApoC-III to enhance triglyceride clearance. • Methodology: A meta-analysis of 9 RCTs (n=550) per PRISMA/PROSPERO standards assessed ASOs in severe HTG (≥ 200 mg/dL) using RevMan 5.4. Outcomes included lipid parameters and safety profiles. • Results: ASOs significantly lowered triglycerides (MD: -53.72), VLDL-C, APOC3, APOB48, and non-HDL-C, while raising HDL-C and APOA1 ($p < 0.00001$). Olezarsen uniquely reduced APOB. Volanesorsen increased LDL-C and caused more injection-site reactions, thrombocytopenia, and nausea. Pancreatitis occurred only in placebo. • Conclusion: APOC3-targeting ASOs markedly improve lipid profiles and may prevent pancreatitis in severe HTG, despite safety concerns with Volanesorsen.



Notable Presentations at ACC 2025

Cardiac Disease Prevention (9/9)



Date	Title	Author	Summary
31 Mar 2025	<u>EFFICACY AND SAFETY OF BEMPEDOIC ACID FOR LDL-C REDUCTION IN STATIN-INTOLERANT PATIENTS: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Muhammad Adil Afzal	• Introduction: Statin-intolerant patients with elevated LDL-C remain at high cardiovascular risk. Bempedoic acid (BA) offers a non-statin alternative for lipid lowering. • Methodology: A meta-analysis of 4 RCTs (n=14,637) assessed BA's efficacy and safety using random-effects modeling. Lipid outcomes were measured via mean difference; adverse events via odds ratios. • Results: BA significantly reduced LDL-C (MD: -23.7 mg/dL; p<0.00001), total cholesterol, apoB, non-HDL-C, and HDL-C. Muscle-related adverse events were not increased, but BA was associated with higher risks of elevated transaminases, renal impairment, and gout. • Conclusion: BA is effective for LDL-C reduction in statin-intolerant patients, with a favorable muscle safety profile but notable metabolic side effects.
31 Mar 2025	<u>CARDIOVASCULAR EFFICACY OF TIRZEPATIDE IN PATIENTS WITH TYPE 2 DIABETES MELLITUS: AN INDIVIDUAL PARTICIPANT DATA META-ANALYSIS OF 8 RANDOMIZED CLINICAL TRIALS</u>	Arya Aminorroaya	• Introduction: Tirzepatide, a dual GIP/GLP-1 receptor agonist, improves glycemic and weight outcomes in T2DM, but its cardiovascular impact remains uncertain. • Methodology: An individual participant data meta-analysis of 8 RCTs (n=8,122) compared tirzepatide vs. placebo, insulin, or GLP-1 RAs for MACE. A mixed-effects Cox model with trial-level inverse probability weighting assessed hazard ratios (HRs), including dose-response effects. • Results: Over a median 46-week follow-up, tirzepatide reduced MACE risk by 19% (HR=0.81; 95% CI: 0.67–0.99). Significant benefit was observed at 10 mg (HR=0.74) and 15 mg (HR=0.64); 5 mg showed no effect (HR=1.05). • Conclusion: Tirzepatide significantly lowers MACE risk in T2DM, primarily at ≥10 mg doses.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (1/13)



Date	Title	Author	Summary
29 Mar 2025	<u>IMPACT OF BASELINE HEART FAILURE SEVERITY ON EFFICACY OF VUTRISIRAN IN PATIENTS WITH TRANSTHYRETIN AMYLOIDOSIS WITH CARDIOMYOPATHY IN THE HELIOS-B TRIAL: A SUBGROUP ANALYSIS - MATHEW S. MAURER</u>	Mathew Maurer	• Introduction: The HELIOS-B Phase 3 trial demonstrated vutrisiran's benefit in reducing all-cause mortality (ACM) and cardiovascular (CV) events in transthyretin amyloid cardiomyopathy (ATTR-CM), alongside improved function and quality of life (QoL). • Methodology: This subgroup analysis evaluated vutrisiran (25 mg every 3 months) vs. placebo by baseline NYHA class (I–III) and NT-proBNP levels ($\leq 2,000$ or $> 2,000$ pg/mL), assessing ACM, recurrent CV events, 6-MWT, KCCQ-OS, NT-proBNP, and troponin I. • Results: Vutrisiran consistently improved ACM, CV events, 6-MWT, KCCQ-OS, and cardiac biomarkers across all baseline subgroups in both overall and monotherapy (non-tafamidis) populations. • Conclusion: Vutrisiran delivers robust clinical benefit across varying ATTR-CM severity levels, supporting its broad utility regardless of baseline NYHA class or NT-proBNP.
29 Mar 2025	<u>EFFICACY AND SAFETY OF RNA INTERFERENCE THERAPEUTICS IN PATIENTS WITH TRANSTHYRETIN AMYLOIDOSIS CARDIOMYOPATHY: A SYSTEMATIC REVIEW AND META-ANALYSIS OF UP-TO-DATE EVIDENCE</u>	George Kidess	• Introduction: ATTR-CM is a fatal, progressive condition. RNA interference (RNAi) therapeutics reduce hepatic transthyretin production but lack comprehensive efficacy and safety data in this population. • Methodology: A meta-analysis of four studies (n=1,179) compared RNAi therapy vs. placebo in ATTR-CM. Outcomes included all-cause mortality, 6-minute walk test (6MWT), and KCCQ-OS, analyzed using random-effects models. • Results: RNAi significantly reduced mortality (OR=0.65; p=0.02), improved 6MWT (MD=+19.66 m; p=0.00001), and increased KCCQ-OS (MD=+4.78; p=0.0001). BNP and strain improved, but LV wall thickness remained unchanged. No safety concerns emerged. • Conclusion: RNAi therapeutics improve survival, function, and QoL in ATTR-CM, with a strong safety profile, supporting their therapeutic role.

Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (2/13)



Date	Title	Author	Summary
29 Mar 2025	<u>SAFETY AND EFFICACY OF SGLT2 INHIBITORS IN PATIENTS WITH TRANSTHYRETIN CARDIAC AMYLOIDOSIS: A SYSTEMATIC REVIEW</u>	Victor López	• Introduction: SGLT2 inhibitors (SGLT2i) benefit HFrEF and HFpEF, yet their role in transthyretin cardiac amyloidosis (TTR-CA)—a classic HFpEF phenotype—remains unclear. • Methodology: A systematic review of 8 cohort studies (n=2,454) assessed SGLT2i safety and efficacy in TTR-CA. Outcomes included mortality, hospitalizations, NYHA class, NT-proBNP, eGFR, and echocardiographic changes. • Results: SGLT2i use was associated with improved NYHA class, NT-proBNP, renal function, and reduced diuretic needs. Four studies reported reduced mortality and heart failure hospitalizations. Echocardiographic improvements and fewer arrhythmias were also noted. Tolerability was high with no new safety signals. • Conclusion: SGLT2i are safe and clinically beneficial in TTR-CA. RCTs are needed to validate these promising observational findings.
29 Mar 2025	<u>EFFICACY OF FINERENONE ACCORDING TO LEFT ATRIAL SIZE IN PATIENTS WITH HEART FAILURE AND MILDLY REDUCED OR PRESERVED EJECTION FRACTION: AN ANALYSIS OF THE FINEARTS-HF TRIAL</u>	Misato Chimura	• Introduction: Left atrial (LA) enlargement in HFmrEF/HFpEF may reflect elevated filling pressures and portend worse outcomes. Its impact on response to finerenone remains unclear. • Methodology: This post-hoc FINEARTS-HF analysis (n=5,658) assessed LA size (LAD, LAVI, or LAA) and outcomes. Patients were stratified by LA size quartiles. The primary endpoint was CV death and total HF events. Finerenone vs. placebo effects were evaluated across strata. • Results: Larger LA size correlated with older age, AF, worse NYHA class, and higher NT-proBNP. Event rates rose with LA size. Finerenone reduced events consistently across quartiles (p-for-interaction=0.91), with no safety differences. • Conclusion: Finerenone improves outcomes in HFmrEF/HFpEF regardless of LA size, supporting its broad applicability across LA remodeling phenotypes.

Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (3/13)



Date	Title	Author	Summary
29 Mar 2025	<u>TRANSFORMING HEART FAILURE CARE: A COMPREHENSIVE META-ANALYSIS OF FINERENONE EFFICACY</u>	Ruchita Jadhav	• Introduction: Mineralocorticoid receptor antagonists (MRAs) reduce heart failure (HF) mortality, but finerenone's role remains less defined. This meta-analysis assesses its efficacy in HF. • Methodology: Three RCTs (n=6,409) were analyzed using a random-effects model to compare finerenone vs. control in HF patients. Primary outcome: worsening HF; secondary: CV mortality, BNP, KCCQ, and MACE. • Results: Finerenone significantly reduced worsening HF events (RR 0.84; p<0.01). Trends toward improved BNP, KCCQ, and reduced CV mortality were observed, but MACE was nonsignificantly higher. No secondary outcome reached statistical significance. • Conclusion: Finerenone reduces HF worsening but shows no confirmed mortality or MACE benefit, warranting further investigation.
29 Mar 2025	<u>EFFICACY OF FINERENONE IN REDUCING HEART FAILURE OUTCOMES AMONG PATIENTS WITH HEART FAILURE OR WITH A HISTORY OF HEART FAILURE: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Vikash Jaiswal	• Introduction: Finerenone benefits CKD and type 2 diabetes patients, but its effect on heart failure (HF) outcomes, particularly in those with pre-existing HF, remains underexplored. • Methodology: A meta-analysis of 3 RCTs (n=7,008; 1,007 with HF history) assessed finerenone's impact on HF outcomes. Odds ratios (ORs) were pooled using a random-effects model (p<0.05 significant). • Results: Finerenone significantly reduced first HF hospitalization (OR 0.82; p<0.001) and CV death/HF hospitalization (OR 0.84; p<0.01). CV death alone was unchanged. Hyperkalemia risk increased (OR 2.26), including hospitalizations (OR 3.39; p<0.001). • Conclusion: Finerenone lowers HF hospitalization risk but increases hyperkalemia-related complications, warranting close monitoring in HF patients.

Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (4/13)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY AND SAFETY OF FINERENONE IN PATIENTS WITH HEART FAILURE AND MILDLY REDUCED OR PRESERVED EJECTION FRACTION: A PRESPECIFIED ANEMIA-SPECIFIC ANALYSIS OF THE FINEARTS-HF TRIAL</u>	Misato Chimura	• Introduction: Anemia frequently complicates HFmrEF/HFpEF and is linked to worse outcomes. Its influence on response to finerenone remains unclear. • Methodology: In FINEARTS-HF (n=5,665), patients with LVEF $\geq 40\%$ were stratified by anemia status (Hb < 12 g/dL in women, < 13 g/dL in men). The primary outcome was CV death and total HF events. Finerenone was compared to placebo. • Results: Anemic patients (28%) had worse HF severity and outcomes. Finerenone reduced primary events similarly in anemic (RR 0.89) and non-anemic patients (RR 0.76; interaction $p=0.27$). Safety was unaffected by anemia. • Conclusion: Finerenone is effective and safe in HFmrEF/HFpEF, regardless of baseline anemia, supporting broad therapeutic use.
29 Mar 2025	<u>EFFICACY AND SAFETY OF DAPAGLIFLOZIN IN ACUTE HEART FAILURE: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS</u>	Priya Hotwani	• Introduction: Acute heart failure (AHF) carries high short-term mortality. Dapagliflozin, an SGLT2 inhibitor, may improve outcomes, but its role in AHF remains under investigation. • Methodology: A meta-analysis of five RCTs (n=912) compared dapagliflozin vs. placebo in AHF. Outcomes included mortality (primary), 30-day readmissions, weight change, hospitalization duration, and hypotension. • Results: Dapagliflozin significantly reduced mortality (RR 0.56; $p=0.01$), 30-day readmissions (RR 0.73; $p=0.05$), and weight (MD -0.93 kg; $p=0.04$). No significant effects on hospital stay ($p=0.72$) or hypotension ($p=0.63$) were observed. • Conclusion: Dapagliflozin improves survival and short-term outcomes in AHF without increasing hypotension risk. Larger trials are needed to confirm long-term benefits.

Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (5/13)



Date	Title	Author	Summary
29 Mar 2025	<u>ANALYZING THE EFFICACY OF WIRELESS STIMULATION ENDOCARDIALLY FOR CARDIAC RESYNCHRONIZATION THERAPY IN HEART FAILURE PATIENTS: A META-ANALYSIS</u>	Usman Ahmed	• Introduction: WiSE CRT is an emerging option for heart failure (HF) patients unresponsive to conventional CRT. Its impact on cardiac remodeling and electrical resynchronization remains under evaluation. • Methodology: A meta-analysis of six cohort studies (n=264) assessed WiSE CRT's effects on LVEF, QRS duration, LVESV, and LVEDV after ≥6 months follow-up. Data were pooled using random-effects modeling. • Results: WiSE CRT significantly improved LVEF (+5.61%), reduced LVESV (−24.01 mL), LVEDV (−24.34 mL), and QRS duration (−38.00 ms). Moderate heterogeneity was noted only in QRS duration ($I^2=66\%$). • Conclusion: WiSE CRT improves ventricular function and remodeling in CRT non-responders. Larger, long-term studies are warranted to validate its clinical utility and refine patient selection.
29 Mar 2025	<u>EFFICACY AND SAFETY OF DIFFERENT COMBINATIONS OF ADD-ON DIURETIC THERAPY IN ACUTE HEART FAILURE: A SYSTEMATIC REVIEW AND NETWORK META-ANALYSIS OF RANDOMIZED CONTROL TRIALS</u>	Andrew Sephien	• Introduction: Add-on diuretic therapies are often needed in acute heart failure (HF) due to loop diuretic resistance. Direct comparisons between such agents remain limited. • Methodology: A network meta-analysis of 29 RCTs (n=8,362) assessed various diuretic add-ons in hospitalized acute HF. Primary outcome: hospital length of stay. Secondary outcomes: urine output, weight loss, HF rehospitalization, hypokalemia. SUCRA ranking was applied. • Results: No direct agent significantly reduced hospital stay (MD: −0.42 days; 95% CI: −0.87 to 0.02). SUCRA ranked acetazolamide (0.89) and SGLT2i (0.70) highest for reducing stay. Evidence certainty ranged from moderate to very low. • Conclusion: Acetazolamide and SGLT2i appear most effective in shortening hospital stay, but direct head-to-head RCTs are needed to validate these findings.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (6/13)



Date	Title	Author	Summary
29 Mar 2025	<u>MULTI-FREQUENCY PHASE ANGLE AND SURVIVAL IN CHRONIC HEART FAILURE PATIENTS: A PROSPECTIVE, OBSERVATIONAL STUDY</u>	Bi Huang	• Introduction: Water retention and cellular dysfunction are central to heart failure (HF) pathophysiology. Phase angle (PhA), measured via bioelectrical impedance analysis (BIA), may reflect these alterations and predict prognosis. • Methodology: In this prospective study of 401 chronic HF patients, PhA was measured at 5kHz, 50kHz, and 250kHz. The primary endpoint was long-term all-cause and cardiovascular mortality. ROC analysis and Cox regression evaluated prognostic utility. • Results: Over 1,200 days, 29.2% died. PhA 50kHz best predicted mortality (AUC 0.708 all-cause; 0.668 CV). A PhA 50kHz ≤ 4.38 independently predicted all-cause (HR 1.81) and CV mortality (HR 1.89; $p < 0.01$), particularly in lower limbs. • Conclusion: PhA 50kHz, especially in the lower limbs, is a strong, independent prognostic biomarker in chronic HF and may guide risk stratification.
29 Mar 2025	<u>EFFECTS OF NINERAFAXSTAT ON MYOCARDIAL ENERGETICS, EXERCISE CAPACITY, AND CARDIAC FUNCTION IN HEART FAILURE WITH PRESERVED EJECTION FRACTION, TYPE 2 DIABETES AND OBESITY- A PHASE 2A CLINICAL TRIAL</u>	Sarah Birkhoelzer	• Introduction: Cardiometabolic HFpEF is characterized by obesity- and diabetes-driven metabolic inefficiency, marked by elevated cardiac fatty acid oxidation and impaired ATP production. • Methodology: In this open-label Phase 2a trial, 27 patients with HFpEF, type 2 diabetes, and obesity received Ninerafaxstat (a partial fatty acid oxidation inhibitor) for 3 months. Primary endpoint: change in cardiac phosphocreatine/ATP (PCr/ATP) ratio. Cardiac function and exercise capacity were assessed via MRI/MRS and clinical tests. • Results: Among 22 completers, PCr/ATP improved significantly (+0.16; $p = 0.02$), correlating with enhanced stroke volume and cardiac output during exercise. KCCQ score improved (+9 points; $p = 0.036$) and 6MWD increased (+17m; $p = 0.01$). • Conclusion: Ninerafaxstat improves cardiac energetics and functional capacity in cardiometabolic HFpEF, supporting its potential as a targeted metabolic therapy.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (7/13)



Date	Title	Author	Summary
29 Mar 2025	<u>EFFICACY AND SAFETY OF FINERENONE ACROSS THE SPECTRUM OF KIDNEY RISK IN HEART FAILURE WITH MILDLY REDUCED OR PRESERVED EJECTION FRACTION</u>	John Ostrominski	• Introduction: Albuminuria and eGFR-based KDIGO risk stratification predicts heart failure (HF) outcomes. Whether finerenone's efficacy varies by KDIGO risk in HFmrEF/HFpEF remains unclear. • Methodology: A FINEARTS-HF secondary analysis (n=5,797) evaluated finerenone vs. placebo across KDIGO risk groups (low, moderate, high/very high) for CV death or total HF events and KCCQ-TSS. Patients with eGFR <25 or K⁺ >5.0 mmol/L were excluded. • Results: Higher KDIGO risk correlated with increased HF event rates. Finerenone consistently reduced the primary outcome across KDIGO strata (P_{interaction}=0.24) and improved KCCQ-TSS (P_{interaction}=0.36). Serious adverse event rates were comparable between arms at all risk levels. • Conclusion: Finerenone provides consistent clinical benefit across KDIGO kidney risk categories in HFmrEF/HFpEF, supporting its broad applicability.
29 Mar 2025	<u>EFFICACY AND SAFETY OF FINERENONE ACCORDING TO NEW YORK HEART ASSOCIATION FUNCTIONAL CLASS IN HEART FAILURE WITH MILDLY REDUCED OR PRESERVED EJECTION FRACTION</u>	John Ostrominski	• Introduction: NYHA classification remains central to heart failure (HF) assessment, but its role in modifying treatment response to finerenone in HFmrEF/HFpEF is unclear. • Methodology: A prespecified FINEARTS-HF analysis (n=6,000) evaluated finerenone's effects on CV death and total HF events, stratified by baseline NYHA class (II vs. III/IV). Secondary endpoints included KCCQ-TSS and NYHA class change at 12 months. • Results: Patients with NYHA III/IV had higher event rates (HR 1.67; p<0.001). Finerenone reduced primary outcomes similarly across NYHA classes (P_{interaction}=0.54), with greater absolute benefit in NYHA III/IV. KCCQ-TSS and NYHA class improved comparably across arms. Safety was consistent. • Conclusion: Finerenone improves outcomes and health status in HFmrEF/HFpEF patients regardless of NYHA class, with enhanced absolute benefit in more symptomatic individuals.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (8/13)



Date	Title	Author	Summary
29 Mar 2025	<u>PRIMARY ENDPOINT EFFICACY RESULTS IN THE ATTRIBUTE-CM STUDY: PRE-SPECIFIED SENSITIVITY ANALYSES ADDRESSED TAFAMIDIS USE</u>	Daniel Judge	• Introduction: Acoramidis demonstrated significant benefit in ATTRibute-CM for ATTR cardiomyopathy. Concomitant tafamidis (TAF) use was allowed, but its impact on acoramidis efficacy required clarification. • Methodology: At Month 30, efficacy was assessed in 611 patients using the Finkelstein-Schoenfeld test. Sensitivity analyses excluded TAF users (principal stratum) or censored data post-TAF initiation (hypothetical strategy). • Results: TAF use was higher in the placebo group (22.8%) vs. acoramidis (14.9%). Median TAF exposure was similar. Both sensitivity analyses confirmed robust efficacy of acoramidis ($p < 0.0001$), unaffected by TAF. Safety remained consistent. • Conclusion: Concomitant tafamidis use did not impact the efficacy or safety of acoramidis, reinforcing its therapeutic value in ATTR-CM.
30 Mar 2025	<u>ROBUSTNESS OF PRIMARY ENDPOINT EFFICACY RESULTS WITH ACORAMIDIS IN ATTR-CM IN THE ATTRIBUTE-CM STUDY: PRE-SPECIFIED NT-PROBNP SENSITIVITY ANALYSES</u>	Jan Griffin	• Introduction: Acoramidis met the primary endpoint in ATTRibute-CM, with NT-proBNP ≥ 500 pg/mL included in the hierarchical composite. Since NT-proBNP elevation predicts mortality, its threshold's impact on outcomes requires validation. • Methodology: Using the Finkelstein-Schoenfeld test in 611 ATTR-CM patients, two pre-specified sensitivity analyses assessed acoramidis efficacy using higher NT-proBNP thresholds (≥ 750 and ≥ 1000 pg/mL) within the original composite endpoint. • Results: Both alternative NT-proBNP thresholds maintained strong statistical significance in favor of acoramidis ($p < 0.0001$). As NT-proBNP followed ACM and CVH in the analytic hierarchy, those results remained unchanged. • Conclusion: Efficacy of acoramidis remains robust across NT-proBNP thresholds, reinforcing its clinical benefit in ATTR-CM.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (9/13)



Date	Title	Author	Summary
30 Mar 2025	<u>STUDY DESIGN AND RATIONALE OF HEROIC-PKP2: A PHASE 1/2 STUDY OF THE SAFETY AND EFFICACY OF LX2020 GENE THERAPY IN PATIENTS WITH ARRHYTHMOGENIC CARDIOMYOPATHY DUE TO A PLAKOPHILIN-2 PATHOGENIC VARIANT</u>	Gregory Aubert	• Introduction: Arrhythmogenic cardiomyopathy (ACM) due to PKP2 mutations (PKP2-ACM) is a life-threatening disorder with limited treatment options that do not target the genetic root cause. • Methodology: LX2020, an investigational AAVrh.10 gene therapy delivering functional PKP2, is under evaluation in HEROIC-PKP2—a Phase 1/2, multicenter, open-label, dose-escalation trial assessing safety and preliminary efficacy in adults with PKP2-ACM. Ten participants will be followed for 52 weeks and then long-term for 4 years. • Results: Trial is ongoing; endpoints include safety, arrhythmia burden, cardiac structure/function, and biomarkers. All participants have ICDs and confirmed PKP2 variants. • Conclusion: HEROIC-PKP2 may pioneer disease-modifying therapy in PKP2-ACM, establishing a framework for gene therapy in genetic cardiomyopathies.
30 Mar 2025	<u>STUDY DESIGN AND RATIONALE OF SUNRISE-FA, A PHASE 1/2 STUDY OF THE SAFETY AND EFFICACY OF LX2006 GENE THERAPY IN PARTICIPANTS WITH CARDIOMYOPATHY ASSOCIATED WITH FRIEDREICH'S ATAXIA</u>	Eric Adler	• Introduction: Friedreich's ataxia (FA) is a progressive autosomal recessive disorder with fatal cardiac involvement (FA-CM), driven by frataxin (FXN) deficiency. No approved therapies currently exist for FA-CM. • Methodology: SUNRISE-FA (NCT05445323) is an ongoing Phase 1/2 multicenter, dose-escalating trial assessing the safety and tolerability of LX2006—an AAVrh.10-based gene therapy delivering FXN to myocardial tissue. Nine adults with confirmed FA and cardiomyopathy will be enrolled for 52 weeks, followed by a 4-year long-term follow-up. • Results: The trial is ongoing. Key endpoints include cardiac imaging, biomarkers, Holter monitoring, and safety assessments. A data safety monitoring board oversees patient safety. • Conclusion: LX2006 may offer the first disease-modifying therapy for FA-CM. SUNRISE-FA could lay the foundation for broader gene therapy strategies in FA and cardiogenetic disorders.

Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (10/13)



Date	Title	Author	Summary
30 Mar 2025	<u>COMPARATIVE EFFICACY OF INTRA-AORTIC BALLOON PUMP COMPARED TO MICROAXIAL FLOW PUMP IN PATIENTS WITH HEART FAILURE-RELATED CARDIOGENIC SHOCK: A RETROSPECTIVE COHORT STUDY</u>	Andrew Sephien	• Introduction: Patients with heart failure-related cardiogenic shock (HF-CS) face high mortality, yet limited data exist comparing intra-aortic balloon pumps (IABP) and Impella devices in this population. • Methodology: A retrospective propensity-matched cohort study (n=6,512) using the TriNetX global database evaluated 30-day survival and safety outcomes in HF-CS patients receiving either IABP or Impella, excluding those with acute coronary syndrome or post-cardiotomy. • Results: IABP was associated with higher 30-day survival than Impella (79.7% vs 77.2%, HR=1.14; p=0.015). Impella patients had greater risks of renal replacement therapy (16.5% vs 13.3%, p<0.001) and stroke (6.7% vs 5%, p=0.003). • Conclusion: In HF-CS, IABP may offer improved survival and safety over Impella. Randomized trials are warranted to confirm these findings.
30 Mar 2025	<u>SAFETY AND EFFICACY OF STATINS IN HEART FAILURE WITH PRESERVED EJECTION FRACTION PATIENTS WITHOUT ATHEROSCLEROTIC CARDIOVASCULAR DISEASE</u>	Farah Yasmin	• Introduction: The role of statins in HFpEF patients without ASCVD remains unclear. This meta-analysis assesses statin efficacy and influencing factors in this population. • Methodology: Six studies (n=14,952) were analyzed via generic inverse variance method, evaluating all-cause mortality and HF hospitalizations. Meta-regression assessed diabetes as a covariate. • Results: Statins significantly reduced all-cause mortality (HR: 0.61; 95% CI: 0.47–0.78; P=0.0001). HF hospitalization was not significantly different overall (RR: 0.87; P=0.39), but diabetes was associated with reduced HF hospitalization risk (P<0.0001). • Conclusion: Statins improve survival in HFpEF without ASCVD; diabetes may modify hospitalization outcomes, warranting further targeted research.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (11/13)



Date	Title	Author	Summary
30 Mar 2025	<u>EFFICACY OF NEGATIVE INOTROPIC THERAPIES FOR OBSTRUCTION REDUCTION IN OBSTRUCTIVE HYPERTROPHIC CARDIOMYOPATHY: A COMPREHENSIVE META-ANALYSIS</u>	Kamal Awad	Introduction: Despite therapeutic advances in obstructive hypertrophic cardiomyopathy (oHCM), the comparative effectiveness of negative inotropes in reducing left ventricular outflow tract (LVOT) gradients remains uncertain. Methodology: A meta-analysis of 26 studies (33 arms, 770 patients) assessed mean changes in LVOT gradients with beta-blockers (BBs), calcium channel blockers (CCBs), and disopyramide using a random-effects model. Results: Disopyramide led to the greatest LVOT gradient reduction at rest (MD: -44.6 mmHg), followed by BBs (-22.1 mmHg) and CCBs (-12.3 mmHg), with significant class-level differences ($P < 0.01$). Metoprolol and verapamil were the most effective agents within their respective classes. Findings were consistent during provocation testing. Conclusion: Disopyramide achieves the most pronounced LVOT gradient reduction in oHCM, outperforming BBs and CCBs.
30 Mar 2025	<u>EFFICACY AND SAFETY OF MINERALOCORTICOID RECEPTOR ANTAGONISTS IN HEART FAILURE WITH PRESERVED EJECTION FRACTION AND HEART FAILURE WITH MILDLY REDUCED EJECTION FRACTION: A META-ANALYSIS INCLUDING THE FINEARTS-HF TRIAL</u>	Muhammad Abdullah	Introduction: Mineralocorticoid receptor antagonists (MRAs) are established in the management of heart failure with reduced ejection fraction (HFrEF), but their role in heart failure with preserved and mildly reduced ejection fractions (HFpEF/HFmrEF) remains uncertain. This meta-analysis evaluates the efficacy and safety of MRAs in these populations, incorporating findings from the recent FINEARTS-HF trial. Methodology: A systematic review and meta-analysis of randomized controlled trials (RCTs) was conducted, with studies selected from major databases. A random-effects model was employed to calculate odds ratios (ORs) for various outcomes, including heart failure worsening and adverse events. Results: A total of 5 RCTs with 9,945 participants were included. MRAs significantly reduced the odds of heart failure worsening (OR = 0.75; 95% CI: 0.67-0.83; $p < 0.00001$). However, no significant difference was found in New York Heart Association (NYHA) class reduction between MRA and placebo. Conclusion: MRAs appear to reduce the worsening of heart failure in HFpEF and HFmrEF, but their use is associated with a higher risk of hyperkalemia and elevated creatinine levels.



Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (12/13)



Date	Title	Author	Summary
31 Mar 2025	<u>SAFETY AND EFFICACY OF SODIUM-GLUCOSE COTRANSPORTER 2 INHIBITORS (SGLT2I) THERAPY IN PATIENTS WITH TRANSTHYRETIN AMYLOID CARDIOMYOPATHY (ATTR-CM): A META-ANALYSIS OF OBSERVATIONAL STUDIES</u>	Rana Mohamed	• Introduction: SGLT2 inhibitors (SGLT2i) may benefit transthyretin cardiac amyloidosis (ATTR-CM), though these patients were excluded from prior heart failure trials. • Methodology: A systematic review up to September 2024 included three observational studies (n=679) assessing SGLT2i efficacy (renal decline, biomarker changes) and safety (discontinuation rate) in ATTR-CM. • Results: SGLT2i significantly attenuated eGFR decline (SMD=0.262; p=0.002) but had no significant effect on NT-proBNP levels (SMD=-0.128; p=0.146). The pooled discontinuation rate was low (6.7%). • Conclusion: SGLT2i are well-tolerated in ATTR-CM and slow renal decline, but further randomized trials are essential to confirm therapeutic benefit.
31 Mar 2025	<u>DIFFERENCES IN THE EFFICACY OF B-BLOCKER THERAPY AFTER ACUTE MYOCARDIAL INFARCTION IN DIFFERENT TYPES OF HEART FAILURE</u>	Tianshu Gu	• Introduction: β-blockers are standard post-AMI therapy, yet their benefit in heart failure with preserved ejection fraction (HFpEF) remains uncertain, especially in real-world settings. • Methodology: A retrospective cohort from 82 hospitals (Tianjin, China; 2010–2024) assessed β-blocker impact on 1-year all-cause and cardiac mortality post-AMI across HFpEF, HFmrEF, and HFrEF phenotypes using IPTW and Cox regression. • Results: Among 6,248 patients, β-blockers significantly reduced cardiac (HR=0.60; p=0.043) and all-cause death (HR=0.68; p=0.009) in HFmrEF/HFrEF. No mortality benefit was observed in HFpEF (HR=1.01 for cardiac death; p=0.968). • Conclusion: β-blockers confer mortality benefit post-AMI in HFmrEF/HFrEF but not in HFpEF, highlighting phenotype-specific treatment effects.

Notable Presentations at ACC 2025

Heart Failure and Cardiomyopathies (13/13)



Date	Title	Author	Summary
31 Mar 2025	<u>EFFICACY OF STATINS IN THE PREVENTION OF ANTHRACYCLINE-INDUCED CARDIOTOXICITY: A SYSTEMATIC REVIEW AND META-ANALYSIS</u>	Abdul Mueez Alam Kayani	• Introduction: Anthracycline-induced cardiotoxicity limits chemotherapy dosing. While dexrazoxane is FDA-approved for prevention, data on statin cardioprotection in this context remain limited. • Methodology: A meta-analysis of 9 studies (n=1,588; mean age 51; 82% female) assessed statin efficacy in preventing anthracycline-related cardiotoxicity. Outcomes included heart failure (HF) risk and mean LVEF decline, using random-effects models. • Results: Statins significantly reduced HF risk (OR: 0.42; p=0.004) and mitigated LVEF decline (MD: +3.46%; p=0.007), supporting a protective cardiac effect during anthracycline therapy. • Conclusion: Statins confer cardioprotection in patients receiving anthracyclines, reducing HF risk and preserving LVEF, with potential to expand preventive strategies beyond dexrazoxane.
31 Mar 2025	<u>EFFICACY OF CARDIOPROTECTIVE DRUGS IN CANCER PATIENTS RECEIVING ANTHRACYCLINES: A PAIRWISE META-ANALYSIS AND NETWORK META-ANALYSIS</u>	Maisha Maliha	• Introduction: Anthracyclines increase cardiotoxicity risk despite their oncologic efficacy. Multiple cardioprotective agents have been investigated to mitigate this risk. • Methodology: A network meta-analysis of 34 studies (n=7,139), including 31 RCTs and 3 SGLT2i cohort studies, assessed ACEIs, ARBs, MRAs, beta-blockers, SGLT2i, and statins in anthracycline-treated patients. Outcomes included LVEF, CTRCD, and mortality. • Results: Cardioprotective therapy improved LVEF (SMD=0.6), reduced CTRCD (RR=0.47), and lowered mortality (RR=0.55). ACEIs ranked highest for preserving LVEF (SMD=1.10), while SGLT2i had the strongest mortality reduction (RR=0.42). • Conclusion: ACEIs, beta-blockers, and statins effectively prevent anthracycline cardiotoxicity. SGLT2i show mortality benefit but require confirmation in RCTs.

Notable Presentations Information at ACC '25

Special topics (Late-breaking) (1/5)



Date	Author	Title
29 Mar 2025	Darren McGuire	<u>Oral Semaglutide Reduces Cardiovascular Events In People With Type 2 Diabetes With Atherosclerotic Cardiovascular And/or Chronic Kidney Disease: Primary Results From The SOUL Randomized Trial</u>
29 Mar 2025	Luke Laffin	<u>Efficacy Of Lorundrostat, A Novel Aldosterone Synthase Inhibitor, In Patients With Uncontrolled Hypertension On A Standardized Antihypertensive Medication Regimen</u>
29 Mar 2025	Antonius Buescher	<u>Development And External Validation Of A Deep Learning Electrocardiogram Model For Risk Stratification Of Coronary Revascularization Need In The Emergency Department</u>
29 Mar 2025	Sergio Raposeiras Roubin	<u>Dapagliflozin In Patients Undergoing Transcatheter Aortic Valve Implantation</u>
29 Mar 2025	Keyvan Karkouti	<u>Four-Factor Prothrombin Complex Concentrate Is Superior To Frozen Plasma In Bleeding Adult Cardiac Surgery Patients With Coagulopathy—Results From A Phase 3, Randomized, Active-Control Study</u>
29 Mar 2025	Deepak Bhatt	<u>The Main Results Of The Phase 3 Reverse-it Trial</u>
29 Mar 2025	Jehangir Ali Shah	<u>Efficacy Of Rivaroxaban Versus Warfarin In Patients With Acute Left Ventricular Thrombus Following Myocardial Infarction: An Open-label Randomized Controlled Trial RIVAWAR Trial Investigators*</u>
29 Mar 2025	Hyo-Soo Kim	<u>Stratified Randomization Study To Compare Different Duration Of Dual Antiplatelet Therapy After Coronary Stenting In Either High Or Low Bleeding Risk Population</u>
29 Mar 2025	NA	<u>Optimizing Antiplatelet Therapy: Real-World Applications of Cangrelor in PCI</u>

Notable Presentations Information at ACC '25

Special topics (Late-breaking) (2/5)



Date	Author	Title
29 Mar 2025	Prabhu Sasankan	<u>HEART FAILURE HOSPITALIZATIONS DECREASED IN STATES THAT IMPLEMENTED TELEHEALTH PARITY LAWS: A DIFFERENCE-IN-DIFFERENCES ANALYSIS - Prabhu Sasankan</u>
29 Mar 2025	Farah Yasmin	<u>TRENDS OF RACIAL AND ETHNIC DISPARITIES IN THE UTILIZATION OF CARDIOMEMS IMPLANTATION WITH HEART FAILURE: A NATIONAL IN-SAMPLE DATABASE ANALYSIS - Farah Yasmin</u>
29 Mar 2025	Nathanael Adjei-Kyeremeh	<u>RACIAL DISPARITIES IN MORTALITY RATES AMONG HEART FAILURE PATIENTS WITH REDUCED EJECTION FRACTION: A RETROSPECTIVE COHORT STUDY - Nathanael Adjei-Kyeremeh</u>
29 Mar 2025	Junaid Mir	<u>GENDER DISPARITIES IN HOSPITAL OUTCOMES OF HYPERTROPHIC CARDIOMYOPATHY - Junaid Mir</u>
29 Mar 2025	Sidra Naz	<u>RACIAL DISPARITIES IN HEART FAILURE AND PANCREATIC CANCER IN THE U.S. AND MICHIGAN: A 21-YEAR RETROSPECTIVE STUDY (1999-2020) - Sidra Naz</u>
29 Mar 2025	Arindam Bagga	<u>SEX, ETHNIC, AND GEOGRAPHIC DISPARITIES IN PREMATURE VS. LATE-ONSET HEART FAILURE MORTALITY, 1999-2020 - Arindam Bagga</u>
29 Mar 2025	Akaravit Thamtharuk	<u>DISPARITIES WHILE LISTING FOR ORTHOTOPIC HEART TRANSPLANTATION: A SYSTEMATIC REVIEW AND META-ANALYSIS - Akaravit Thamtharuk</u>
29 Mar 2025	Muhammad Sohaib Asghar	<u>TRENDS IN LIVER CIRRHOSIS AND HEART FAILURE-RELATED MORTALITY IN ADULTS IN THE UNITED STATES FROM 1999 TO 2019: AN ANALYSIS OF GENDER, RACE/ETHNICITY, AND GEOGRAPHIC DISPARITIES - Muhammad Sohaib Asghar</u>
29 Mar 2025	Viraj Shah	<u>TRENDS AND DISPARITIES IN MORTALITY DUE TO ACUTE MYOCARDITIS: A NATIONWIDE U.S. ANALYSIS FROM 1999 TO 2022 - Viraj Shah</u>

Notable Presentations Information at ACC '25

Special topics (Late-breaking) (3/5)



Date	Author	Title
29 Mar 2025	Nicholas Philip	<u>RACIAL DISPARITIES IN MORTALITY RATES AMONG PATIENTS OF HEART FAILURE AND CIRRHOSIS IN THE UNITED STATES: A CDC WONDER DATABASE ANALYSIS (1999-2020) - Nicholas S. Philip</u>
29 Mar 2025	Eileen Handberg	<u>Primary And Secondary Outcomes Of The Women's Ischemia Trial To Reduce Events In Non Obstructive Coronary Artery Disease</u>
29 Mar 2025	Marc Bonaca	<u>The Effect Of Once-weekly Subcutaneous Semaglutide On Functional Capacity In People With Type 2 Diabetes And Peripheral Artery Disease: Primary Results From The Phase 3b, Randomized, Placebo-controlled, Double Blind Stride Trial</u>
29 Mar 2025	Isabelle MAHE	<u>Extended Anticoagulant Treatment With A Reduced Versus Full Dose Apixaban In Patients With Cancer-associated Venous Thromboembolism: The API-CAT Study</u>
30 Mar 2025	Rajesh Kharbanda	<u>Routine Cerebral Embolic Protection In Transcatheter Aortic Valve Implantation: The British Heart Foundation (BHF) PROTECT-TAVI Trial</u>
30 Mar 2025	Raj Makkar	<u>Clinical And Echocardiographic Outcomes Among The First 500 Patients Treated With A Dedicated Transcatheter Aortic Valve For Pure Aortic Regurgitation In The Align-ar Clinical Trial</u>
30 Mar 2025	Michael Reardon	<u>5-year Outcomes After Transcatheter Or Surgical Aortic Valve Replacement In Low-risk Patients With Aortic Stenosis</u>
30 Mar 2025	Jianan wang	<u>Comparison Of Angiography-derived Fractional Flow Reserve-guided And Intravascular Ultrasound-guided Percutaneous Coronary Intervention Strategies: The FLAVOUR II Trial</u>
30 Mar 2025	Saibal Kar	<u>Two-year Outcomes Of Transcatheter Tricuspid Valve Edge-to-edge Repair For Tricuspid Regurgitation: The Triluminate Pivotal Trial</u>

Notable Presentations Information at ACC '25

Special topics (Late-breaking) (4/5)



Date	Author	Title
30 Mar 2025	William Fearon	<u>Fractional Flow Reserve Guided Percutaneous Coronary Intervention Compared With Bypass Surgery: Final 5 Year Results Of The Fractional Flow Reserve Versus Angiography For Multivessel Evaluation 3 Trial</u>
30 Mar 2025	Joo-Yong Hahn	<u>Clopidogrel Versus Aspirin For Long-term Maintenance Monotherapy In Patients With High Ischemic Risk After Percutaneous Coronary Intervention</u>
30 Mar 2025	Giulia Magnani	<u>Alliance For Secondary Prevention After An Acute Coronary Syndrome.</u>
30 Mar 2025	non role non role	<u>Optimizing Antiplatelet Therapy: Real-World Applications of Cangrelor in PCI</u>
30 Mar 2025	Ruth Masterson Creber	<u>Comparative Effectiveness Of Mobile Integrated Health Versus A Transitions Of Care Coordinator In Patients With Heart Failure: Results From The MIGHTy-Heart Trial</u>
30 Mar 2025	Roland Van Kimmenade	<u>Liberal Fluid Intake Versus Fluid Restriction In Chronic Heart Failure</u>
30 Mar 2025	Carolyn Hendrickson	<u>The Equiox Study: Evaluating Pulse Oximeter Bias Across A Range Of Skin Pigment In Critically Ill Adults</u>
30 Mar 2025	Stefan Anker	<u>Ferric Carboxymaltose Assessment Of Morbidity And Mortality In Patients With Iron Deficiency And Chronic Heart Failure (FAIR-HF2) Trial</u>
31 Mar 2025	Eileen Handberg	<u>Primary And Secondary Outcomes Of The Women's Ischemia Trial To Reduce Events In Non Obstructive Coronary Artery Disease</u>

Notable Presentations Information at ACC '25

Special topics (Late-breaking) (5/5)



Date	Author	Title
31 Mar 2025	Marc Bonaca	<u>The Effect Of Once-weekly Subcutaneous Semaglutide On Functional Capacity In People With Type 2 Diabetes And Peripheral Artery Disease: Primary Results From The Phase 3b, Randomized, Placebo-controlled, Double Blind Stride Trial</u>
31 Mar 2025	Darren McGuire	<u>Oral Semaglutide Reduces Cardiovascular Events In People With Type 2 Diabetes With Atherosclerotic Cardiovascular And/or Chronic Kidney Disease: Primary Results From The SOUL Randomized Trial</u>
31 Mar 2025	Luke Laffin	<u>Efficacy Of Lorundrostat, A Novel Aldosterone Synthase Inhibitor, In Patients With Uncontrolled Hypertension On A Standardized Antihypertensive Medication Regimen</u>
31 Mar 2025	Javed Butler	<u>Ferric Carboxymaltose Assessment Of Morbidity And Mortality In Patients With Iron Deficiency And Chronic Heart Failure (FAIR-HF2) Trial</u>
31 Mar 2025	Rajesh Kharbanda	<u>Routine Cerebral Embolic Protection In Transcatheter Aortic Valve Implantation: The British Heart Foundation (BHF) PROTECT-TAVI Trial</u>
31 Mar 2025	Michael Reardon	<u>5-year Outcomes After Transcatheter Or Surgical Aortic Valve Replacement In Low-risk Patients With Aortic Stenosis</u>



Key Industry Sponsored Sessions Information



ACC 2025 Key Industry Sponsored Sessions Information (1/2)

Date	Sponsor	Title
29 March 2025	AstraZeneca	Health Disparities in hATTR
29 March 2025	Novartis	RNAi Science & Therapeutic Innovation: Past, Present and Future
29 March 2025	Bms/Pfizer	VALIDATION OF THE HYPERTROPHIC CARDIOMYOPATHY SYMPTOM QUESTIONNAIRE (HCMSQ) 7-DAY RECALL - Yue Zhong
30 March 2025	Johnson & Johnson	Increasing female physician leadership in clinical trials
30 March 2025	AstraZeneca	Championing Communities of Health: A Cross-Industry Panel Discussion on Community Education, Cardiovascular Disease Prevention and Screening Programs



ACC 2025 Key Industry Sponsored Sessions Information (2/2)

Date	Sponsor	Title
30 March 2025	Johnson & Johnson	<u>Championing Communities of Health: A Cross-Industry Panel Discussion on Community Education, Cardiovascular Disease Prevention and Screening Programs</u>
30 March 2025	AstraZeneca	<u>VARIATION IN DISEASE SEVERITY, ATTR-SPECIFIC DRUG TREATMENT RATES, AND TIME TO TREATMENT IN NEWLY DIAGNOSED TRANSTHYRETIN AMYLOIDOSIS-CARDIOMYOPATHY IN THE MEDICARE FEE-FOR-SERVICE POPULATION - John A. Venditto</u>
30 March 2025	Novartis	<u>Backed by LEQVIO® (inclisiran) Data: Why Adherence Matters</u>
31 March 2025	Amgen Inc	<u>LIPID LOWERING THERAPY USE IN HIGH RISK ASCVD PATIENTS WITHOUT PRIOR MI OR STROKE - PRELIMINARY DATA FROM VESALIUS-REAL, US - Swati Sakhuja</u>







Themes from key AI / ML presentations at ACC 2025 (1/3)

- **AI/ML at ACC 2025 is transforming cardiovascular care by enabling accurate risk prediction, personalized treatment, and real-time diagnostics—demonstrated across large-scale datasets with clinically meaningful outcomes**
- Check out the key AI / ML themes at ACC 2025 below:
 - **AI-ECG as a Universal Cardiac Screening Tool:**
 - AI-ECG models from the UK Biobank (n=42,372) and trials like INSIGHT-CM and EchoGo demonstrated robust prediction of HF, AF, HCM, and ATTR-CM with AUROC values up to 0.94 and strong phenomic correlations
 - **ML Enhances Mortality & Risk Stratification Across Cardiac Conditions:**
 - LGBM and XGBoost models in AMI-CS (AUC 0.955), post-MI (AUC 0.82), and post-PCI (AUC 0.813) settings accurately predicted 30-day to long-term outcomes, guiding personalized management
 - **AI in HFpEF and LV Dysfunction Prediction:**
 - EchoGo HF and ILVD models detected early HFpEF (>50% risk in 27.9%) and predicted LVEF <40% with 91% accuracy, enabling preclinical risk stratification and intervention planning



Themes from key AI / ML presentations at ACC 2025 (2/3)

- **AI for Rare Disease Detection & Trial Optimization:**

- AI tools such as Synapsis AI and INSIGHT-CM accelerated ATTR-CM trial screening and improved diagnosis across cohorts, with specificity up to 96.2% and 29 patients identified in 1 week

- **AI in Valve Disease: TAVR and RMV Applications:**

- ML models for TAVR sizing and mortality (AUC 0.85) and DNNs for RMV detection (AUC 0.877) demonstrated accurate support in structural heart disease care and decision-making

- **Population-Based Risk Prediction via Smart Devices and Imaging:**

- Smartwatch-detected asymAF (n=64,030) had a 1.6x increased MACE risk. AI-based CAC scoring flagged under-managed patients (CAC >400) with 17% MACE rate and low follow-up rates

- **Real-world implementation of Pediatric and Global Tools:**

- AI-ECG outperformed GE MUSE in 200,000+ pediatric cases (AUROC 0.99 WPW); RHD detection in Cape Town (AUC 0.89) and HCM models performed well globally (AUROC ~0.94)



Themes from key AI / ML presentations at ACC 2025 (3/3)

- **AI to Reduce Hospital Burden and Improve Workflow:**

- ePRISM halved LOS post-PCI (3.44 to 1.79 days), SOFIYA automated patient engagement, and NNM predicted same-day LAAC discharge (AUC 0.80), showing AI's system-level efficiency

- **Imaging-AI Synergy in Advanced Diagnostics:**

- ML-enhanced multiparametric CMR accurately graded CAV (macro-AUC 0.90), while DTI-CMR enabled arrhythmic imaging using a U-Net model (Dice 0.85), expanding non-invasive diagnostic access

- **Behavioral and Biomarker-Based Personalization Tools:**

- TRIMAPS in SURPASS trials identified tirzepatide responders (HRs 2.66 WL; 2.48 HbA1c), and AI gait analysis detected subclinical frailty in cardiac patients (p=0.034)

- **Clinician Perceptions & Adoption Barriers in AI Integration:**

- An ACC 2024 survey (n=154) revealed 64–75% lacked ML/DL knowledge, but 75% saw patient care benefits—highlighting a gap in education despite growing clinical interest



Noteworthy AI / ML presentations at ACC 2025

Notable Presentations at ACC 2025

AI / ML (1/15)



Date	Title	Author	Summary
29 Mar 2025	DOMAIN-SPECIFIC AND SHARED PHENOMIC ASSOCIATIONS OF ARTIFICIAL INTELLIGENCE-ENHANCED INTERPRETATION OF ELECTROCARDIOGRAMS: A PHENOME-WIDE ASSOCIATION STUDY (PHEWAS) IN THE UK BIOBANK	Philip M. Croon	• Introduction: AI-ECG models detect cardiac anomalies, but their broader phenomic associations may enhance their utility as digital biomarkers. • Methodology: ECGs from 42,372 UK Biobank participants were analyzed using 7 validated AI-ECG models. PheWAS identified phenotype associations with model-predicted risk scores. • Results: Twenty-two phenotypes were significantly linked ($p < 1.1 \times 10^{-4}$) to high-risk predictions across ≥ 6 models. Common traits included heart failure, conduction defects, and hypertension, with mitral regurgitation-specific associations observed only in mitral valve models. • Conclusions: AI-ECG models detect overlapping cardiovascular features; composite approaches may optimize their clinical role as digital cardiac biomarkers.
29 Mar 2025	ARTIFICIAL INTELLIGENCE MISDIAGNOSES IN ECG INTERPRETATION: A SYSTEMATIC REVIEW	ASEEL BADWAN	• Background: AI enhances ECG interpretation efficiency and accuracy, yet misdiagnosis risks may compromise patient safety and limit adoption. • Methodology: A systematic review of 135 peer-reviewed studies (PubMed/Scopus, past decade) assessed AI ECG interpretation accuracy, focusing on misdiagnosis rates and comparisons with human experts. • Results: CNNs were used in 50 studies. Average sensitivity/specificity were 84.4%/84.9%. Misdiagnoses included false atrial fibrillation, QT misclassification, and missed NSTEMIs. Variability was linked to training data quality, ECG heterogeneity, and artifact interference. • Conclusion: Despite promising accuracy, AI ECG tools require further validation to ensure safe, generalizable, and clinically reliable integration.

Notable Presentations at ACC 2025

AI / ML (2/15)



Date	Title	Author	Summary
29 Mar 2025	MACHINE LEARNING FOR PREDICTING THE PROGNOSIS IN PATIENTS WITH ACUTE MYOCARDIAL INFARCTION COMPLICATED BY CARDIOGENIC SHOCK	Bi Huang	• Introduction: Accurate prediction of 30-day mortality in AMI-CS remains challenging. This study explores ML models to enhance prognostic accuracy. • Methodology: Data from 268 AMI-CS patients (2013–2022) were used to build nine ML models; performance was validated using the MIMIC-IV database. SHAP values quantified feature importance. • Results: LGBM outperformed other models (AUC=0.955), with key predictors including lactic acid, systolic BP, LVEF, BUN, and age. External validation confirmed high performance (AUC=0.853). • Conclusions: ML, particularly LGBM, offers accurate mortality prediction in AMI-CS, supporting its use in early risk stratification and management.
29 Mar 2025	MACHINE LEARNING INTEGRATION OF CLINICAL AND ECHOCARDIOGRAPHIC DATA PREDICTS LONG-TERM SURVIVAL FOLLOWING MYOCARDIAL INFARCTION	Liam Scanlon	• Background: Accurate post-MI risk stratification is critical for guiding therapy. This study developed an ML model integrating clinical and echocardiographic data to predict long-term mortality. • Methodology: In 3,202 acute MI patients (median follow-up: 4.5 years), ML models were trained (70%) and tested (30%) using clinical and echo variables. SHAP identified key predictors. • Results: XGBoost achieved AUC 0.82 and 86.3% accuracy, outperforming logistic regression (AUC 0.783, accuracy 75.5%). Top predictors included age, renal function, mitral velocities, and LVEF. • Conclusion: ML models significantly enhance long-term mortality prediction post-MI, enabling personalized care and improved clinical decision-making.

Notable Presentations at ACC 2025

AI / ML (3/15)



Date	Title	Author	Summary
29 Mar 2025	DEVELOPMENT OF MACHINE LEARNING MODELS INCORPORATING CLINICAL, DEMOGRAPHIC, AND ECHOCARDIOGRAPHY VARIABLES FOR PREDICTING LEFT VENTRICULAR SYSTOLIC DYSFUNCTION IN PATIENTS WITH ISOLATED LEFT VENTRICULAR DILATION	Pranav Bhargava	• Introduction: No models currently predict progression to LV systolic dysfunction in patients with isolated LV dilation (ILVD). This study developed a predictive ML model using EHR and echocardiographic data. • Methodology: Among 15,042 ILVD patients (2020–2024), 4,230 with follow-up echos were analyzed. Five ML models and a unanimous voting ensemble predicted LVEF <40%. • Results: Progression occurred in 6.5% (median 450 days). Key predictors included LVSD (systole), age, heart rate, TAPSE, male sex, and Black race. The ensemble model achieved 91% accuracy, 94% specificity, and a 7.97x progression risk ($p < 0.001$). • Conclusions: ML enables early identification of ILVD patients at risk for LV dysfunction, informing timely intervention strategies.
29 Mar 2025	DEEP LEARNING FOR DETECTION OF PRECLINICAL HEART FAILURE IN THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS	Amogh Karnik	• Background: AI offers potential for early detection of heart failure with preserved ejection fraction (HFpEF). This study evaluated AI-predicted HFpEF and its functional associations. • Methodology: In 2,432 CVD-free adults (MESA Exam 6), an FDA-cleared AI tool (EchoGo HF) assessed HFpEF probability via echocardiography. Associations with 6MWT and KCCQ were analyzed using multivariable regression. • Results: 27.9% had HFpEF probability >50%. These individuals had worse LV strain, higher LV mass/LA volume, and reduced 6MWT and KCCQ scores. Older age, higher BMI, and diabetes were prevalent. • Conclusion: AI-augmented echo identifies preclinical HFpEF with meaningful clinical and functional correlations, enabling early intervention opportunities.

Notable Presentations at ACC 2025

AI / ML (4/15)



Date	Title	Author	Summary
29 Mar 2025	IMPACT OF ARTIFICIAL INTELLIGENCE CLINICAL DECISION SUPPORT TOOLS ON LENGTH OF STAY IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION	Karley B. Fischer	• Introduction: CI-AKI and bleeding post-PCI increase complications and healthcare burden. This study evaluated an AI tool for individualized risk and contrast management. • Methodology: In 642 PCI patients (Apr 2023–Mar 2024), ePRISM AI generated risk assessments and contrast volume recommendations. Outcomes were compared to baseline data (Jun–Nov 2022). • Results: Average LOS decreased 48% (3.44 to 1.79 days). Patients with CI-AKI had LOS of 6.3 days vs 1.68 days without. • Conclusions: ePRISM effectively guided risk-based PCI care, significantly reducing hospital stay and improving outcomes through AI-driven decision support.
29 Mar 2025	MULTINATIONAL VALIDATION OF AN ARTIFICIAL INTELLIGENCE ALGORITHM TO IDENTIFY ATTR CARDIOMYOPATHY FROM ELECTROCARDIOGRAPHIC IMAGES	Veer Sangha	• Background: ATTR-CM remains underdiagnosed globally. This study validated an AI-ECG algorithm for ATTR-CM detection across international populations. • Methodology: AI-ECG, trained on 11,121 ECGs (AUROC 0.91), was tested on age-sex matched cohorts from New York (n=140) and Athens (n=100) using scintigraphy-confirmed cases. • Results: AUROC was 0.84 (Northwell) and 0.83 (Athens); odds ratios for ATTR-CM detection were 12.7 and 13.0, respectively. Sensitivities were 0.9 (Northwell) and 0.82 (Athens). Performance was consistent across subgroups. • Conclusion: AI-ECG offers a robust, scalable screening tool for ATTR-CM using standard ECG images, enabling earlier detection in diverse clinical settings.

Notable Presentations at ACC 2025

AI / ML (5/15)



Date	Title	Author	Summary
29 Mar 2025	INSIGHT-CM: INTERPRETABLE NATURAL LANGUAGE PROCESSING SYSTEM FOR IDENTIFICATION OF TRANSTHYRETIN AMYLOIDOSIS CARDIOMYOPATHY USING MACHINE LEARNING AND DEEP LEARNING	Akshay Arora	Introduction: ATTR-CM diagnosis is often delayed. This study developed an explainable AI tool to detect undiagnosed cases within heart failure populations. Methodology: The INSIGHT-CM model used RNNs on unstructured clinical notes (n=100,290) with NLP/NER to predict ATTR-CM (n=1,108). Model explainability was provided by LIME. Results: The model achieved 82.9% sensitivity, 96.2% specificity, and an F1 score of 34.2%. Key predictors were extracted from narrative clinical text using LIME and NER tools. Conclusions: Explainable AI leveraging NLP can effectively identify at-risk ATTR-CM patients, supporting earlier diagnosis and clinical intervention.
30 Mar 2025	DEVELOPMENT AND MULTINATIONAL VALIDATION OF A DEEP LEARNING ALGORITHM TO DETECT AND PREDICT ATRIAL FIBRILLATION AND FLUTTER FROM IMAGES OF 12-LEAD ELECTROCARDIOGRAMS IN SINUS RHYTHM	Arya Aminorroaya	Background: Detecting atrial fibrillation (AF) from sinus rhythm ECGs (srECGs) is challenging due to lack of signal access; image-based AI models may overcome this barrier. Methodology: An AI-ECG model was trained on 4.7M ECGs from 0.9M patients to detect AF-srECGs from 12-lead images. External validation was performed using UK Biobank (N=42,739) and incident AF prediction assessed in UKB (N=42,148) and ELSA-Brasil (N=13,438). Results: AUROC was 0.82 (Yale) and 0.81 (UKB) for AF-srECG detection. Positive screens showed 3–4x higher incident AF risk (C-statistic: 0.79 UKB; 0.78 ELSA-Brasil). Conclusion: This AI-ECG model enables image-based AF detection and risk prediction, supporting early identification at the point of care.

Notable Presentations at ACC 2025

AI / ML (6/15)



Date	Title	Author	Summary
30 Mar 2025	MULTINATIONAL VALIDATION OF A DEEP LEARNING ALGORITHM TO IDENTIFY HYPERTROPHIC CARDIOMYOPATHY FROM ELECTROCARDIOGRAPHIC IMAGES	Veer Sangha	• Introduction: HCM is underdiagnosed; this study evaluated an AI-ECG model using ECG images to enable scalable point-of-care detection. • Methodology: An AI model trained on 124,553 ECGs (Yale) was validated on ECG images from MIMIC-IV (Boston), AUMC (Amsterdam), and UK Biobank. HCM cases were confirmed via CMR or ICD coding. • Results: Across 220 HCM cases and 46,702 controls, AUROC was 0.94 overall. Site-specific AUROCs: 0.94 (MIMIC-IV), 0.92 (AUMC), 0.91 (UKB); sensitivities ranged from 0.72–0.94; specificities 0.83–0.92. Performance was consistent across demographics. • Conclusions: AI-ECG image-based screening reliably detects HCM across global populations, enabling broad, efficient clinical application.
30 Mar 2025	ARTIFICIAL INTELLIGENCE-DRIVEN CORONARY ARTERY CALCIUM SCORING: A HUGE WINDOW OF OPPORTUNITY FOR CARDIOVASCULAR DISEASE PREVENTION AND TREATMENT	Melis Ketenci	• Background: CAC scoring predicts long-term cardiovascular risk. This study assessed AI-driven CAC scoring on routine chest CTs for non-cardiac indications to guide risk stratification. • Methodology: The FDA-approved Bunkerhill I-CAC algorithm was applied retrospectively to chest CTs (Jan–Jun 2024, Stamford Hospital). Outcomes in patients with CAC >400 were evaluated, including MACE, statin/aspirin use, cardiology follow-up, and mortality. • Results: Among 200 patients (mean age 76), 17% experienced MACE, 11% died, and only 59% saw a cardiologist. Just 41% were on aspirin, 57% on statins. • Conclusion: AI-enabled CAC scoring on non-gated CTs identifies high-risk patients often missed by current pathways, offering critical opportunities for preventive intervention.

Notable Presentations at ACC 2025

AI / ML (7/15)



Date	Title	Author	Summary
30 Mar 2025	MACHINE LEARNING MODELS FOR PREDICTING LONG-TERM CARDIOVASCULAR OUTCOMES IN KIDNEY TRANSPLANT RECIPIENTS	William D. Park	• Introduction: Cardiovascular risk prediction in kidney transplant recipients (KTR) is limited. This study developed ML models to forecast long-term cardiovascular outcomes in KTR. • Methodology: Data from 518 adult KTRs (2015–2023) were analyzed using 454 features. Twelve ML models were compared using five-fold cross-validation (80/20 train/validation split) for mortality, CV death, HF hospitalization (HFH), and non-fatal MI. • Results: Best model AUCs were 79.2% (all-cause mortality), 65.4% (CV death), 86.5% (HFH), and 83.3% (MI). HFH prediction was most accurate; CV death had the lowest performance. • Conclusions: ML models offer promising accuracy in predicting cardiovascular outcomes in KTR, supporting personalized clinical decision-making.
30 Mar 2025	UTILIZING CUSTOM AI VOICE HEALTHCARE ASSISTANT TO AUTOMATE PATIENT PRE-OPERATIVE ONBOARDING PROCESS	Derek A. Pineda	• Background: Healthcare workforce shortages strain pre-procedural workflows like PCI prep. This study introduces an AI assistant to automate routine patient interactions. • Methodology: The SOFIYA assistant, powered by LLMs and EHR integration, was trained on pre-op materials and HCP experience. It uses phone calls for patient interaction, prioritizing accessibility over app-based platforms. • Results: SOFIYA delivers personalized, natural-sounding responses, gathers clinical data (e.g., allergies, anticoagulants), and logs interactions directly into the EHR. It automates appointment reminders and NPO instructions. • Conclusion: Automating routine pre-op tasks with LLMs can ease HCP workload, improve efficiency, and offer accessible, flexible patient engagement without time constraints.

Notable Presentations at ACC 2025

AI / ML (8/15)



Date	Title	Author	Summary
30 Mar 2025	AUTOMATED DETECTION OF RHEUMATIC MITRAL VALVE DISEASE FROM 12-LEAD ECG USING DEEP LEARNING	Stephanie Hu	• Introduction: RMV remains prevalent in low-resource regions. This study assessed whether a deep neural network (DNN) can detect RMV using ECGs, a globally accessible tool. • Methodology: A foundation ECG model pretrained on 1.6M UCSF ECGs was fine-tuned using 1968 ECGs from 202 RMV patients and 7872 matched controls. Performance was evaluated via AUC, sensitivity, and specificity, including subgroup analyses. • Results: The fine-tuned model achieved AUC 0.877, sensitivity 0.782, specificity 0.764. Stratified performance remained robust, though specificity declined in MR and high LAV subgroups. • Conclusions: DNNs, enhanced by foundation model pretraining, can accurately detect RMV from ECGs, offering scalable screening in resource-limited settings.
30 Mar 2025	ASSESSMENT OF CAUSAL ASSOCIATION BETWEEN ELECTROCARDIOGRAPHIC AGING PREDICTED BY ARTIFICIAL INTELLIGENCE AND THE RISK OF ATRIAL FIBRILLATION: A MENDELIAN RANDOMIZATION ANALYSIS	Seunghoon Cho	• Background: ECG-derived biological aging (AI-ECG age gap) may predict atrial fibrillation (AF) risk. This study assessed its causal relationship with incident AF. • Methodology: Using UK Biobank data, measured and genetically predicted AI-ECG age gaps were analyzed via multivariable regression and Mendelian randomization (MR), including two-sample MR replication with GWAS data. • Results: Each 1-year increase in age gap increased AF risk (measured: HR 1.02; genetic: OR 1.05). Two-sample MR confirmed causality (OR 1.13–1.16). Sensitivity analyses supported robustness. • Conclusion: AI-ECG age gap is causally associated with AF risk, offering a novel biomarker for early identification and prevention strategies.

Notable Presentations at ACC 2025

AI / ML (9/15)



Date	Title	Author	Summary
30 Mar 2025	AUTOMATED DIFFUSION CMR: NOVEL MACHINE LEARNING APPROACH TOWARDS IMPROVING ACCESS TO DIFFUSION CMR	David Han	• Introduction: DTI-CMR assesses cardiac microstructure but is limited by long scan times and reliance on regular heart rhythms. This study applies machine learning to enable DTI in arrhythmic patients. • Methodology: A U-Net model identified rest-phase images from automated DTI (aDTI) acquisitions in 4 volunteers and 1 amyloidosis patient. Selected images were used to compute MD and FA and compared to ECG-gated DTI • Results: The model achieved a Dice score of 0.85. No significant differences were found in MD ($p=0.81$) or FA ($p=0.12$) vs. gDTI. Correlation was strong for FA ($r=0.86$). • Conclusions: ML-enabled aDTI is feasible and accurate, offering a faster, rhythm-independent CMR tool for broader clinical use.
30 Mar 2025	MULTIPARAMETRIC CARDIAC MRI FOR DETECTION AND GRADING OF CARDIAC ALLOGRAFT VASCULOPATHY IN HEART TRANSPLANT RECIPIENTS: A MACHINE LEARNING APPROACH	Bruno B. Lima	• Background: CAV is a major cause of late post-transplant mortality. This study evaluated multiparametric CMR with machine learning as a non-invasive alternative to ICA for CAV detection. • Methodology: In 136 heart transplant recipients, CMR-derived metrics were used to train a decision tree classifier for CAV grading (0, 1, 2/3). Thresholds for MBF, CFR, T1, and T2 were derived via ROC analysis. • Results: The model achieved 81.6% accuracy (macro-AUC 0.90). Key predictors included CFR, ischemia, and non-ischemic LGE. CMR parameters significantly differed across CAV severity groups. • Conclusion: AI-enhanced multiparametric CMR accurately stratifies CAV severity, offering a safe, effective alternative to invasive ICA for transplant recipients.

Notable Presentations at ACC 2025

AI / ML (10/15)



Date	Title	Author	Summary
31 Mar 2025	ARTIFICIAL INTELLIGENCE BASED PREDICTIVE MODELING FOR TAVR VALVE AND SIZE SELECTION	Akhil Vaid	• Introduction: This study addresses the complexity and subjectivity of transcatheter aortic valve replacement (TAVR) valve selection and sizing by leveraging machine learning (ML) and imaging data. • Methodology: A retrospective review of 2,653 native TAVR cases (2017–2024) was conducted using 46 CT and clinical features. XGBoost models were trained (90:10 split) to predict valve type (BEV vs SEV) and sizing. • Results: The model achieved strong discrimination (AUC 0.85, 95% CI: 0.80–0.95) and sizing accuracy of 91% (95% CI: 87–94%). SHAP values confirmed model integrity. • Conclusions: ML accurately supports TAVR decision-making, warranting broader validation across institutions.
31 Mar 2025	ASYMPTOMATIC ATRIAL FIBRILLATION DETECTED IN ELECTROCARDIOGRAMS WITH DEEP LEARNING METHODS IDENTIFIES PARTICIPANTS WITH HIGHER RISK FOR ISCHEMIC STROKE AND CARDIOVASCULAR DEATH: RESULTS FROM ANALYZING 64,030 ECG IMAGES IN THE UK BIOBANK	Olga Demler	• Background: The clinical risk associated with smartwatch-detected asymptomatic atrial fibrillation (asymAF) remains unclear. This study assessed whether asymAF predicts major adverse cardiovascular events (MACE). • Methodology: ECGs from 64,030 UK Biobank participants were analyzed using a validated deep learning model (ECG-AF). Kaplan-Meier and Cox models assessed incident ischemic stroke (IS), myocardial infarction (MI), and cardiovascular (CV) death across asymAF, AF, and AF-free cohorts. • Results: AsymAF was linked to significantly higher IS and CV death risk vs. AF-free individuals. Adjusted hazard ratio for MACE was 1.6 (95% CI: 1.2–2.2). • Conclusion: AsymAF independently predicts IS and CV death, underscoring its clinical relevance and preventive opportunity.



Notable Presentations at ACC 2025

AI / ML (11/15)



Date	Title	Author	Summary
31 Mar 2025	ARTIFICIAL INTELLIGENCE ENHANCED ELECTROCARDIOGRAM FOR THE DETECTION OF RHEUMATIC HEART DISEASE	David Harmon	• Introduction: Rheumatic heart disease (RHD) remains a major burden in low-resource settings. This study aimed to develop an AI-enhanced ECG (AI-ECG) tool for RHD detection using standard 12-lead ECGs. • Methodology: Data from 854 confirmed RHD patients and 3,035 controls were used (2003–2022, Cape Town). AI-ECG model training/validation/testing was split 80/10/10%. Diagnosis was confirmed via echocardiography. • Results: The AI-ECG achieved an AUC of 0.89 (95% CI: 0.847–0.933) with 82.6% sensitivity, 85.3% specificity, 92% NPV, and 70.2% PPV. Mixed valvular disease predominated in RHD patients. • Conclusions: AI-ECG enables accurate, accessible RHD detection, promising improved diagnosis in underserved regions.
31 Mar 2025	INTEGRATING ARTIFICIAL INTELLIGENCE PIPELINES INTO THE DIAGNOSIS OF CARDIOMYOPATHIES	Ashley Akerman	• Background: Differentiating cardiac amyloidosis from HFpEF is essential but challenging. This study evaluates real-world deployment of two AI echocardiography tools for diagnostic support. • Methodology: EchoGo Amyloidosis and EchoGo Heart Failure were tested across 17 clinical sites in a validation study. Outputs were assessed individually and in combination for diagnostic performance. • Results: EchoGo Amyloidosis and EchoGo Heart Failure achieved 86% and 82% accuracy, respectively. Combined use increased detection to 96% for cardiac amyloidosis and 85% for HFpEF. • Conclusion: Dual AI model integration improves diagnostic yield for cardiomyopathies, supporting broader implementation in complex clinical workflows.

Notable Presentations at ACC 2025

AI / ML (12/15)



Date	Title	Author	Summary
31 Mar 2025	BMC2 MACHINE LEARNING RISK PREDICTION OF POST-DISCHARGE MORTALITY AND READMISSION AFTER PCI: THE PERILOUS ROAD AHEAD	David Hamilton	• Introduction: Early readmissions and mortality post-PCI are common and costly. This study developed machine learning models to predict high-risk patients post-discharge. • Methodology: Data from 20,075 post-PCI patients (2018–2022) across 48 Michigan hospitals were analyzed using XGBoost. Pre-/post-procedural features were used to predict 30-day readmission and 1-year mortality; AUCs assessed model performance. • Results: Mean age was 72.6; 37.7% female. One-year mortality was 7.8%, 30-day readmission 11.3%. The models performed well: AUC 0.813 (mortality) and 0.743 (readmission). • Conclusions: XGBoost-based models accurately identify patients at risk post-PCI, enabling proactive strategies to reduce readmissions and mortality.
31 Mar 2025	INDIVIDUALIZED RESPONSE TO TIRZEPATIDE FOR WEIGHT LOSS AND GLYCEMIC CONTROL USING COMPUTATIONAL PHENOMAPPING AND MACHINE LEARNING IN THE SURPASS TRIALS: THE TRIMAPS TOOLKIT	Phyllis Thangaraj	• Background: Optimizing Tirzepatide use requires identifying likely responders. This study developed and validated a machine learning-based phenomapping tool for individualized prediction. • Methodology: In SURPASS-1 (n=478), 46-dimensional baseline data were used to define patient neighborhoods. XGBoost models (TRIMAPS) predicted >15% weight loss and HbA1c <7%, and were validated in SURPASS-5. • Results: Key predictors included sex (WL) and metformin use, obesity, heart rate (HbA1c). TRIMAPS identified responders with HRs of 2.66 (WL) and 2.48 (HbA1c), confirming predictive validity. • Conclusion: TRIMAPS accurately stratifies Tirzepatide responders, enabling targeted, outcome-driven therapy allocation.

Notable Presentations at ACC 2025

AI / ML (13/15)



Date	Title	Author	Summary
31 Mar 2025	ARTIFICIAL-INTELLIGENCE BASED PREDICTION MODEL FOR THIRTY-DAY MORTALITY OF TAVR PATIENTS IN CHINA: A NATIONAL STUDY FROM NTCVR COHORT	Qifeng Zhu	• Introduction: No universal model exists for predicting 30-day mortality post-TAVR. This study aimed to develop AI-based risk prediction tailored to Chinese patients. • Methodology: Data from 6,294 TAVR patients (2017–2022) across 80+ centers were used. External validation was set aside by province; remaining data were split 80/20 for training/internal validation. 1,125 AI models were evaluated. • Results: The best-performing model used ANOVA T-score (feature engineering) and C5.0 (derivation). C-index: 0.765 (internal), 0.682 (external). Top predictors included coronary height, circulatory support, hemoglobin, LVEF, and septal thickness. • Conclusions: A robust, multimodal AI-based TAVR mortality model was successfully developed and validated for Chinese populations.
31 Mar 2025	ELECTROCARDIOGRAM-BASED DEEP LEARNING PROVIDES EXPERT-LEVEL AUTOMATED DIAGNOSIS OF THE PEDIATRIC 12-LEAD ECG	Joshua Mayourian	• Background: Pediatric ECG interpretation suffers from limited expert access globally. This study developed an AI-ECG tool to automate diagnosis in children. • Methodology: A CNN was trained (75%) and tested (25%) on >580,000 ECGs from ~200,000 pediatric patients to detect any abnormality, WPW, or prolonged QTc. Performance was evaluated via AUROC/AUPRC • Results: AI-ECG achieved AUROC/AUPRC of 0.94/0.96 (any abnormality), 0.99/0.88 (WPW), and 0.96/0.63 (QTc), outperforming GE MUSE. Experts agreed more often with AI-ECG than with initial readings. • Conclusion: AI-ECG enables expert-level pediatric ECG diagnosis, potentially expanding high-quality cardiac care access.

Notable Presentations at ACC 2025

AI / ML (14/15)



Date	Title	Author	Summary
31 Mar 2025	THE NOVEL USE OF NEURAL NETWORK ARTIFICIAL INTELLIGENCE IN PREDICTING SAME DAY DISCHARGE IN PATIENTS THAT UNDERWENT LEFT ATRIAL APPENDAGE CLOSURE	Chapman Wei	• Introduction: Efficient discharge after LAAC is vital as procedure volume increases. This study assesses neural network models (NNMs) for predicting same-day discharge. • Methodology: Using NIS 2016–2018 data, 12,280 AF patients post-LAAC were analyzed. NNMs and logistic regression models were built using ICD-10-based clinical features. AUC >0.8 indicated acceptable predictive performance. • Results: 86% were discharged day 1. NNM identified top delay predictors: disposition, bleeding, elective status, age, and heart failure. NNM outperformed logistic regression (AUC 0.80 vs 0.74). • Conclusions: NNMs more accurately predict optimal LAAC discharge, offering a potential tool to optimize resource use and clinical decision-making.
31 Mar 2025	CARDIOLOGISTS PERCEPTIONS ON THE USE OF ARTIFICIAL INTELLIGENCE IN CARDIOLOGY	Rajesh Kabra	• Background: Despite rapid AI advances, cardiologists' perceptions of its clinical utility remain unclear. This ACC survey assessed AI awareness and attitudes. • Methodology: A May–June 2024 survey was sent to 527 US-based ACC panelists; 154 responded (29%). Responses were categorical and reported as percentages. • Results: Most cardiologists lacked knowledge of generative AI (64%), ML (61%), and DL (75%), though one-third used AI tools. Key perceived benefits included improved efficiency (78%) and patient care (75%), while concerns included lack of validation (63%) and transparency (60%). Over half supported enhanced AI education. • Conclusion: Cardiologists show limited AI familiarity but high interest; targeted education may bridge gaps and support adoption.

Notable Presentations at ACC 2025

AI / ML (15/15)



Date	Title	Author	Summary
31 Mar 2025	EVALUATING A MEDICALLY TRAINED ARTIFICIAL INTELLIGENCE AND NATURAL LANGUAGE PROCESSING-ENABLED, LARGE-LANGUAGE MODEL IN SCREENING FOR TRANSTHYRETIN CARDIAC AMYLOIDOSIS CLINICAL TRIALS	Trejeeve Martyn	• Introduction: Manual clinical trial screening is time-consuming and often incomplete. This study evaluated a medically-trained LLM, Synapsis AI, for automating ATTR-CM trial pre-screening. • Methodology: Synapsis AI assessed 11 inclusion and 24 exclusion criteria for the DepletTR-CM trial using structured and unstructured EMR data. Outputs were validated against investigator-defined criteria. • Results: In 1 week, 1,476 EMRs were screened, identifying 4 full matches and 26 high partial matches—all true positives. Synapsis AI found 29 candidates missed by 90 days of manual screening. • Conclusions: LLM-driven screening significantly improves speed, yield, and accuracy in rare cardiomyopathy trial recruitment, offering scalable efficiency gains.
31 Mar 2025	A REAL-TIME ARTIFICIAL INTELLIGENCE-BASED GAIT ANALYSIS TOOL IDENTIFIES GAIT CHARACTERISTICS ASSOCIATED WITH PRE-FRAILTY AND CARDIAC FRAIL PATIENTS	Leong Jia Juin Benjamin	• Introduction: Early frailty detection is vital in cardiac patients. This study evaluated AI-based gait analysis to identify subclinical frailty-related gait changes. • Methodology: In 40 cardiac patients (mean age 67), 49 gait biomarkers were analyzed against Fried Frailty Score, Clinical Frailty Scale, and cardiac frailty. SPM1D and multivariable regression were used for analysis. • Results: Prefrail/frail patients had reduced LVEF (50% vs 63%, $p=0.002$) and increased LV mass. Gait parameters—stride speed, gait speed, double support—were independently linked to frailty. Left step length predicted cardiac frailty ($p=0.034$). • Conclusions: AI gait analysis accurately identified cardiac frailty, suggesting potential for early, non-invasive frailty screening.

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