

Poster

CORONARY: ACUTE CORONARY SYNDROME, GENERAL

P1

THE TRAJECTORY OF MYOCARDIAL INFARCTION IN THE SOUTH ASIAN DEMOGRAPHIC - A RETROSPECTIVE CASE SERIES ANALYSIS

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Introduction

Myocardial Infarction (MI) is a disease that affects millions of people every year all over the world and yet the trajectory of MI has predominantly been studied in the characteristic Caucasian, middle-aged male patient. Considering the fact that the incidence of MI in women and younger adults has been on the rise and it has been noted that women, younger adults tend to have a varying presentation and progression of MI than the typical patient described above - changes which can potentially affect how quickly they present to the hospital, how promptly they are diagnosed, what treatments they will require and what complications they may develop - there is a need to document and analyze the effect of gender and age on the presentation, progression and complications of MI. The purpose of this study is to analyze the basic data obtained from reviewing a series of MI cases in the South Asian demographic, a demographic that is significantly underreported in global research, over the last 5 years on the basis of gender, age and ethnicity in order to highlight relevant trends which can help clinicians be better prepared for the varying trajectories of MI seen in the population.

Methods

A total of 384 case records of patients admitted for treatment of Myocardial Infarction at Kasturba Hospital, Manipal, Karnataka, India in the last 5 years (2018 - 2023) were analyzed. The selected cases were a random sample of the around 4184 admissions for MI in the given time period which met the inclusion criteria of the study.

From each case, the data regarding gender, age, presenting symptoms, comorbidities, in-hospital treatment and complications was noted and analyzed on the basis of gender (male and female) and age (the studied cases were divided into the following age groups (by age in years): 18 - 30, 31 - 45, 46 - 60, 61 - 75, 75 - 90 and >90). Then the whole data set was analyzed to generate data regarding the trajectory of MI in the South Asian demographic, which was then compared with the findings of similar studies already conducted in developed countries.

Results

When the data regarding the trajectory of MI was studied on the basis of gender, several statistically significant ($p < 0.05$) differences in the presentation and progression of MI between male and female patients were noted.

Female MI patients were on average older, had a longer stay of admission, had a higher proportion of patients who developed acute pulmonary edema associated with the MI ($p = 0.029$), had a higher proportion of patients with hypertension as a comorbidity ($p = 0.040$), had a higher proportion of patients requiring advanced complication management methods like pRBC (packed red blood cells) transfusion ($p = 0$), mechanical ventilation ($p = 0.030$) and CPR ($p = 0.037$), had a higher proportion of patients needing frusemide ($p = 0.00017$), nebulization ($p = 0$), antiarrhythmics ($p = 0$), antibiotics ($p = 0.0015$) and anti-emetics ($p = 0$) while admitted, a higher proportion of patients requiring nephrology consult during admission ($p = 0.030$) and had a higher percentage of patients passing away during admission ($p = 0.016$). On the other hand, male MI patients had a higher proportion of patients with smoking as a risk factor ($p = 0.0016$) and a higher proportion of patients needing anti-anginal ($p = 0$) and oral hypoglycemic medications ($p = 0$) medication while admitted.

Additionally, numerous other variables in relation to the trajectory of MI showed a statistically significant difference between male and female MI patients, including pre-hospital delay ($p = 0.014$), type of MI-region of the cardiac muscle infarcted ($p = 0$), the proportion of patients who had mitral regurgitation on echocardiography with varying severity ($p = 0.00055$), laboratory investigations like hemoglobin level ($p = 0$), platelet count ($p = 0.039$) and electrolyte values and the proportion of patients who developed various subsequent complications of the myocardial infarction ($p = 0.015$).

When the data regarding the trajectory of MI was studied on the basis of age, several statistically significant ($p < 0.05$) differences were noted between the various age groups in numerous components of the presentation and progression of MI, including the proportion of MI patients who passed away during admission ($p = 0.015$), the type of MI- re-

gion of the cardiac muscle infarcted ($p = 0$), the proportion of patients who developed acute pulmonary edema ($p = 0.00036$) and acute kidney injury ($p = 0$) associated with the MI, the proportion of patients who had hypertension as a comorbidity ($p = 0$), the proportion of patients who had an ST elevation on ECG ($p = 0.037$), the severity of left ventricle dysfunction ($p = 0.0071$) and mitral regurgitation ($p = 0$) found on echocardiography, the affected coronary arteries found on angiography ($p = 0$), the method chosen for secondary management - after primary line of treatment such as Primary PCI was performed ($p = 0.019$) and the development of subsequent complications of the myocardial infarction ($p = 0.0031$).

Additionally, there was a statistically significant difference between the above mentioned age groups in numerous other variables related to MI, including the presenting symptoms, laboratory investigations such as hemoglobin level ($p = 0$), platelet count ($p = 0$), glycated hemoglobin - HbA1c value ($p = 0.029$), serum potassium ($p = 0.0012$), serum urea ($p = 0.0017$), serum creatinine ($p = 0$) and blood lipid profile, the various departmental consults required during admission, the need for advanced complication management techniques like pRBC (packed red blood cells) transfusion ($p = 0.0022$) and the various medications required during admission.

Lastly, when the collected data was summarized as a whole and compared to the findings of similar studies already conducted in developed countries, numerous differences in the trajectory of MI in developed versus developing countries were identified including mean age of MI patients, prevalence of Type 2 Diabetes Mellitus and Hypertension as comorbidities, the proportion of patients with ST elevation on ECG and the proportion of patients who developed cardiogenic shock associated with MI, to list a few examples.

Conclusions

The goal of this study is to highlight the differences in the presentation and progression of MI in patients from the South Asian demographic, especially women and young adults, from the findings reported in the classical MI patient seen in historical MI research. The reporting of such differences can help raise awareness, both among clinicians and the general public, regarding the varying presentations of MI and the varying progressions and complications of MI in different individuals, so as to promote early diagnosis and prompt treatment along with minimizing undue complications.

CORONARY: ACUTE CORONARY SYNDROME, PCI

P2

IMPACT OF LEFT ANTERIOR DESCENDING ARTERY INVOLVEMENT ON SHORT-TERM OUTCOMES IN VERY ELDERLY PATIENTS WITH ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION

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Introduction

ST-elevation myocardial infarction (STEMI) in patients aged 85 years or older poses unique clinical challenges due to frailty, comorbidities, and high procedural risks. The left anterior descending artery (LAD) supplies a large portion of the myocardium, and its involvement has been associated with poor prognosis in the general population. However, data on its prognostic impact in the very elderly are limited. This study investigates the role of LAD as the culprit vessel in predicting short-term outcomes in STEMI patients aged ≥ 85 years.

Methods

We analyzed 586 STEMI patients aged ≥ 85 from six Italian centers between 2010 and 2023. Patients were stratified into two groups based on the infarct-related artery: LAD and non-LAD. Clinical, demographic, and procedural data were collected. The primary endpoint was 30-day mortality. Multivariate Cox regression models were used to identify predictors of mortality in both groups.

Results

Among 586 patients, 288 (49.1%) had LAD as the culprit lesion. LAD pa-

tients had lower rates of prior myocardial infarction (9.4% vs 18.5%, $p < 0.01$), prior coronary artery bypass grafting (0.3% vs 4.7%, $p < 0.01$), and dyslipidemia (35.4% vs 45.6%, $p = 0.02$). Single-vessel disease was more frequent in the LAD group (42% vs 31.5%, $p = 0.01$). The 30-day mortality was significantly higher in the LAD group (22.9% vs 15.8%, HR 1.57, 95% CI: 1.06–2.33, $p = 0.024$). Inotropic support was the strongest independent predictor of mortality in LAD patients (HR 4.60, 95% CI: 2.67–7.92, $p = 0.01$), while dyslipidemia was associated with a lower risk (HR 0.51, 95% CI: 0.28–0.92, $p = 0.03$).

Conclusions

In STEMI patients aged ≥ 85 years, LAD involvement is linked to higher short-term mortality rates. Early identification of high-risk features is crucial for prognosis and management. Despite having a less complex comorbidity profile, patients with LAD involvement experienced poorer outcomes, highlighting the prognostic significance of infarct location in this frail population.

CORONARY: ACUTE CORONARY SYNDROME, PHARMACOLOGY

P3

INCLISIRAN NEI PAZIENTI AD ALTO RISCHIO, EFFICACIA CLINICA

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Inclisiran, siRNA anti-PCSK9 somministrato semestralmente, ha mostrato nei trial (es. ORION-8) una efficace riduzione dell'LDL-C (~50-55%). Mancano tuttavia dati approfonditi in real-world, con follow-up prolungato. Coorte consecutiva di 60 pazienti ad alto rischio cardiovascolare in trattamento con statine \pm ezetimibe e LDL-C ≥ 70 mg/dL. Tutti hanno ricevuto due dosi di inclisiran a distanza di 3 mesi. L'LDL-C è stato misurato a 3 e 9 mesi. Endpoint primario: percentuale di pazienti con LDL-C < 55 mg/dL.

Età media: 63 anni; 72% maschi; 25% diabetici; 12% intolleranza statine. Al follow-up a 3 mesi, il 95% dei pazienti ha raggiunto LDL-C < 55 mg/dL. A 9 mesi, il target è stato mantenuto nel 95% (solo 2 pazienti presentavano LDL-C pari a 60 mg/dL). Nessun evento avverso serio rilevato. In ambito real-world, inclisiran garantisce una riduzione rapida e duratura dell'LDL-C fino a 9 mesi, con risultati sovrapponibili o superiori a quelli osservati in ORION-8. Questi dati supportano l'efficacia e la sostenibilità dell'approccio semestrale nella gestione del paziente ad alto rischio cardiovascolare.

CORONARY: CHRONIC CORONARY SYNDROME, GENERAL

P4

COMPARING AI-DRIVEN AND HEART TEAM DECISION-MAKING IN MULTIVESSEL CORONARY ARTERY DISEASE

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Introduction

Multivessel coronary artery disease (CAD) remains a challenging condition requiring multidisciplinary decision-making, particularly when determining between percutaneous coronary intervention (PCI) and coronary artery bypass grafting (CABG). Recent advancements in artificial intelligence (AI), particularly generative language models like ChatGPT, present an opportunity to assist in the decision-making process. However, their ability to replicate human clinical judgment in complex scenarios, such as multivessel CAD, remains untested.

Methods

The aim of this study was to evaluate the concordance between recommendations from AI (ChatGPT) and those from Heart Teams (HT) in the management of multivessel CAD, with a focus on comparing treatment strategies such as PCI and CABG. A retrospective observational study was conducted on 137 patients with multivessel CAD, discussed at multidisciplinary HT meetings in 2024. Standardized clinical vignettes, including clinical and anatomical data, were presented to ChatGPT for treatment recommendations. The AI's responses were compared with the HT decisions regarding PCI or CABG. Statistical analysis was performed to assess the level of agreement and predictive value of ChatGPT's recommendations.

Results

ChatGPT achieved an overall accuracy of 65% in its recommendations. The agreement rate was higher for CABG (82.4%) than for PCI (44.4%). Discordance was identified in 48 patients, with a notable bias towards recommending CABG. Factors such as age, diabetes, and chronic kidney disease were predictors of discordance, though no significant factors emerged for PCI or CABG subgroups. AI, particularly ChatGPT, de-

monstrated modest concordance with HT decisions in the management of multivessel CAD, especially favoring CABG.

Conclusions

The integration of AI into clinical decision-making in cardiology holds significant potential, yet its current limitations—both technical and ethical—highlight the need for caution. While AI can assist in standardizing recommendations, as seen in its preference for CABG in multivessel disease, it lacks the nuanced evaluation provided by experienced clinicians. Addressing challenges related to patient data privacy, algorithmic variability, and regulatory oversight will be essential to ensure that AI complements, rather than compromises, clinical judgment in the pursuit of safe and personalized care.

P5

ASSOCIATION OF N-TERMINAL PRO-BRAIN NATRIURETIC PEPTIDE PLASMA LEVELS WITH THE SEVERITY OF STABLE CORONARY ARTERY DISEASE

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Introduction: The relationship between plasma N-terminal pro-brain natriuretic peptide (NT-proBNP) levels and the severity of stable coronary artery disease (CAD) remains uncertain.

This study aimed to investigate the association between plasma NT-proBNP levels and the presence and severity of angiographic lesions in patients with suspected CAD.

Methods: We prospectively measured plasma NT-proBNP levels in 656 patients referred to our center for elective diagnostic coronary angiography due to symptoms or signs of CAD over a two-year period. Patients with conditions known to elevate NT-proBNP levels, including heart failure, severe valvular disease, atrial fibrillation, severe chronic kidney disease (eGFR < 30 mL/min), prior coronary artery bypass grafting, or age over 80 years, were excluded.

Results: A total of 453 patients were included (mean age 65 ± 8 years; 22% women). Coronary angiography revealed critical CAD (obstruction $\geq 70\%$ in at least one main epicardial vessel) in 326 patients (72%). Baseline characteristics were comparable between patients with critical and non-critical CAD. NT-proBNP levels were significantly higher in patients with critical CAD compared to those with non-critical CAD (202 vs. 136 pg/mL, respectively; $p < 0.001$). NT-proBNP levels were positively correlated with the severity and extent of CAD. In receiver operating characteristic (ROC) curve analysis, an NT-proBNP value above 160 pg/mL identified patients with prognostic critical CAD (i.e., involvement of the left main or proximal left anterior descending artery) with an area under the curve (AUC) of 0.63 (95% CI: 0.58-0.68; $p < 0.001$).

Conclusions: NT-proBNP plasma level is associated with the severity of CAD.

P6

PRETRATTAMENTO CON INCLISIRAN PRIMA DELLA PCI PROGRAMMATA: UNA STRATEGIA REAL WORLD PER OTTIMIZZARE IL PROFILO LIPIDICO PERI-PROCEDURALE

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Il controllo intensivo del colesterolo LDL-C è raccomandato nelle linee guida ESC per pazienti con coronaropatia nota. Nei soggetti con indicazione a PCI programmata, il pretrattamento con inclisiran potrebbe consentire di ottimizzare il profilo lipidico prima della procedura, favorendo un migliore controllo del rischio residuo nel periodo peri-procedurale.

Sono stati osservati 20 pazienti consecutivi con cardiopatia ischemica nota e indicazione a PCI programmata sulla base di imaging non invasivo (scintigrafia miocardica o angio-TC coronarica). Tutti i pazienti erano in terapia con statina \pm ezetimibe e presentavano LDL-C ≥ 70 mg/dL. È stato avviato pretrattamento con inclisiran almeno 30 giorni prima della PCI. L'LDL-C è stato misurato al basale, prima della PCI e a 3 mesi dopo la procedura. Endpoint primario: percentuale di pazienti con LDL-C < 55 mg/dL al momento della PCI.

L'età media era di 66 anni; il 75% dei pazienti era di sesso maschile; il 30% diabetico. Al momento della PCI, 17 pazienti su 20 (85%) avevano raggiunto un valore di LDL-C < 55 mg/dL. A 3 mesi, il target era mantenuto nel 90% dei casi. Nessun evento avverso correlato al trattamento è stato segnalato. Il pretrattamento è stato ben tollerato e ha richiesto un solo accesso ambulatoriale per la somministrazione iniziale.

Il pretrattamento con inclisiran prima di PCI programmata si è dimostrato efficace e sicuro nel ridurre i livelli di LDL-C in pazienti con coronaropatia nota. Questa strategia ha consentito di raggiungere un controllo lipidico ottimale già al momento della procedura, con risultati sovrapponibili o superiori a quelli osservati negli studi clinici. L'approccio è facilmente integrabile nella pratica clinica e potenzialmente utile per migliorare la gestione del rischio aterotrombotico peri-PCI.

P7

CORONARY SINUS REDUCER IMPLANTATION IN A PATIENT WITH REFRACTORY ANGINA AND MULTIVESSEL CORONARY ARTERY DISEASE: A CASE REPORT

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Introduction

Refractory angina is a clinical condition characterized by chronic (>3 months) chest pain due to reversible myocardial ischemia, which persists despite optimal medical therapy and is not amenable to surgical or percutaneous revascularization, including recanalization of chronic total occlusions. In this context, the **Coronary Sinus Reducer (CSR)** represents a novel therapeutic option. This case illustrates the clinical effectiveness of CSR implantation in a patient with advanced coronary artery disease and persistent anginal symptoms.

Methods

A 62-year-old male with chronic coronary syndrome, previously treated with double coronary artery bypass grafting (Left Internal Mammary Artery to Left Anterior Descending Artery and Right Internal Mammary Artery to I Obtuse Marginal Artery) in 1995 and percutaneous coronary angioplasty with one drug-eluting stent implantation on MO1 and two drug-eluting stents on the distal LIMA-LAD anastomosis in 2015. In April 2021 patient complained of worsening effort-induced angina (CCS Class III, NYHA Class III), despite maximally tolerated medical therapy. Transthoracic echocardiography showed preserved left ventricular systolic function (EF 60%), with basal inferior septal hypokinesia and grade I diastolic dysfunction. ECG revealed sinus rhythm, borderline PR interval, and mild horizontal ST depression in leads V4-V6. Coronary angiography revealed occlusion of the LAD and CX (both perfused by patent grafts), critical stenosis of the left main coronary artery, and diffuse moderate atherosclerosis of the right coronary artery. Optimization of antianginal medical therapy (beta-blocker, nitrates, ranolazine) was recommended. One month after discharge, the patient still reported persistent symptoms. Following clinical re-evaluation, CSR implantation was indicated. The device was successfully delivered via the right internal jugular vein using a standard percutaneous technique.

Results

The procedure was completed without complications. At three-month follow-up (November 2021), the patient reported a marked increase in angina threshold with improved functional status. ECG and echocardiographic findings remained stable, and no adverse events or need for therapy adjustments were observed.

Conclusions

CSR implantation appears to be a safe and effective therapeutic strategy in patients with refractory angina who are not suitable candidates for further revascularization. The procedure may significantly improve anginal symptoms, particularly within the first few months post-implantation. Further studies are warranted to assess its long-term efficacy and the underlying physiological mechanisms.

CORONARY: CHRONIC CORONARY SYNDROME, PCI

P8

LASER E RESTENOSI: UN OPZIONE TERAPEUTICA NELLE RIVASCOLARIZZAZIONI FALLITE

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Introduzione

La restenosi intrastent (ISR), rappresenta una complicanza significativa della rivascularizzazione percutanea, in particolare nei pazienti con lesioni complesse o calcifiche. Le opzioni terapeutiche includono l'angioplastica semplice (PTCA), i palloni medicati e, nei casi di ISR fibro-calcifica occlusive e non occlusive, le tecniche ablative, come il laser a eccimeri (ELCA), possono offrire un vantaggio. Presentiamo un caso di ISR critica, trattata con ELCA.

Metodi

Un paziente maschio di 78 anni, diabetico e iperteso con pregressa PTCA in corso di STEMI (Fig1) ed impianto di 2DES su coronaria destra distale coinvolgente la crux e la biforcazione con ramo IVP e ramo PL (tecnica TAP- Fig2) si presenta dopo circa 8 mesi per restenosi critica intrastent del DES impiantato su ramo IVP(Fig3); dopo alcune post-dilatazioni con POBA, si impianta 1DES in overlap con il precedente.

Dopo ulteriori 6 mesi il paziente si presenta nuovamente in PS lamentando epigastralgia responsiva ad antiacidi e rialzo delle troponine seriate. All' esame angiografico si evidenzia restenosi critica alla crux coinvolgente il tratto ostiale del ramo IVP(Fig4). Sono risultati infruttuosi i

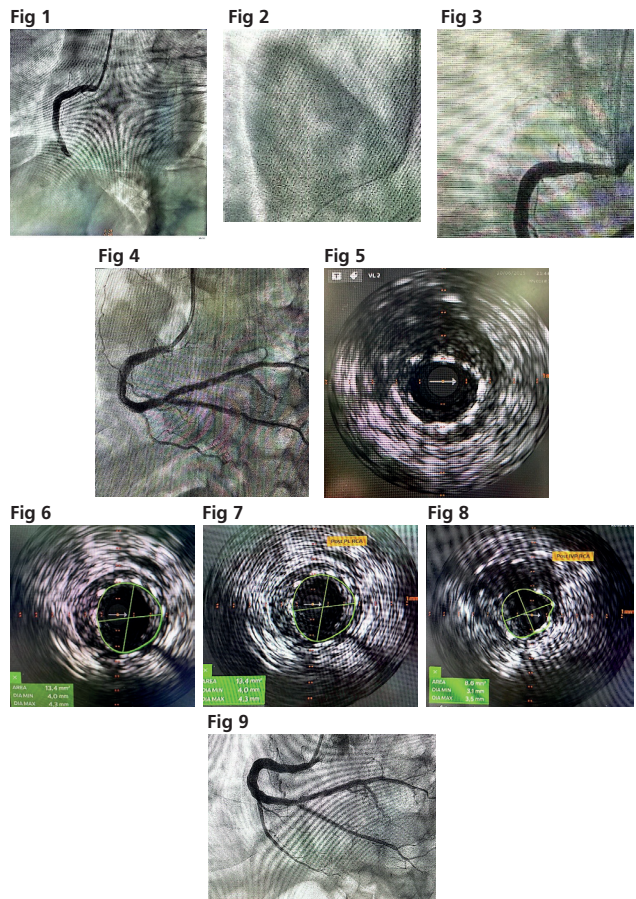
tentativi di post-dilatazione con palloni NC di diametro crescente (3.0-3.5-4.5 -5.0); alla valutazione IVUS evidenza di placca intrastent fibrosa e calcifica (arco di calcio di 180 gradi -Fig5). Si è optato per PTCA guidata da atereotomia con laser mediante catetere da 0.9mm,80 Fluence /80 Hz, si effettua passaggio sonda laser con catetere turbo elite 0.9 e successiva dilatazione dello stent di coronaria destra verso ramo PL con pallone NC 4.5mm. Si effettua PTCA di restenosi della crux coinvolgente l'origine del ramo PL e del ramo IVP già sede di pregressa PTCA con doppio stent e tentativo di trattamento di restenosi risultato parzialmente efficace. Si effettua quindi kissing balloon con palloni NC 3.5 e successiva rePot con pallone NC 4.5mm. Si assiste a buon risultato angiografico finale confermato anche dalla valutazione IVUS di crux, ramo PL e IVP(Fig6-Fig7-Fig8-Fig9) che evidenzia buona apposizione degli stents in assenza di dissezioni e con aree luminali esenti da restenosi significative.

Risultati

L'applicazione del laser ha permesso la frammentazione del materiale restenotico facilitando il passaggio del pallone e garantendogli un'espansione subottimale. Il paziente è stato dimesso dopo 48 ore. Al follow up a 3 mesi è asintomatico e la SPECT è negativa per ischemia inducibile.

Conclusioni

Il deposito di calcio è formato da strati di diversa densità e può essere lievemente, moderatamente e gravemente calcificato; inoltre, può avere profondità, larghezza, forma e posizione diverse. Il laser freddo sfrutta come strategia le basse temperature in modo da ottenere maggiore efficacia e minori effetti secondari rispetto all'impiego del calore. Agisce attraverso tre tipi di meccanismi: fotochimico, fototermico, fotomeccanico. Attraverso questi tre meccanismi si arriva a una esplosione cellulare con produzione di un particolato di diametro inferiore ad un globulo rosso e questo evita l'embolizzazione distale e riduce al minimo le dissezioni.



P9

RECOVERY OF LEFT VENTRICULAR FUNCTION AND APICAL THROMBUS RESOLUTION FOLLOWING COMPLEX CHRONIC TOTAL OCCLUSION REVASCULARIZATION IN A HIGH-RISK ISCHEMIC CARDIOMYOPATHY PATIENT

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Introduction

Chronic total occlusion (CTO) of the left anterior descending (LAD) artery is associated with poor prognosis, especially in patients with ischemic cardiomyopathy and apical thrombus. Early revascularization, combined with optimized medical therapy, may prevent adverse remodeling and improve the clinical outcome. This case illustrates the clinical history of a 57-year-old male with severe LV dysfunction, apical thrombus, and multivessel coronary disease who underwent complex PCI of LAD CTO with favorable functional and structural outcomes.

Methods

The patient presented in December 2024 with signs of heart failure, and a previously unrecognized subacute anterior myocardial infarction was diagnosed. Initial transthoracic echocardiogram (TTE) revealed apical akinesia and a layered apical thrombus (3x1.5 cm), with a left ventricular ejection fraction (LVEF) of 35%. Cardiac Magnetic Resonance Imaging (MRI) confirmed a severely depressed LVEF (27%) and apical thrombosis. Coronary angiography revealed an ostial LAD CTO with collateral filling and diffuse atherosclerosis. Medical therapy was optimized, including anticoagulation and antiplatelet agents. Colchicine was added due to a mild pericardial effusion suggestive of post-infarction pericarditis. In January 2025, the patient was re-admitted with NSTEMI. A multidisciplinary team performed successful PCI with Intra-Aortic Balloon Pump support, involving bifurcation stenting of the LAD and diagonal branch using four drug-eluting stents.

Results

Post-PCI TTE showed significant improvement in LVEF to 52%, and later to 55% at 3-month follow-up. The apical thrombus progressively regressed (<6 mm), and a myocardial perfusion scan revealed partially reversible defects in anterior and inferobasal walls, with a fixed apical defect. The patient remained asymptomatic (NYHA II, CCS I), with good blood pressure control and preserved renal function under adjusted pharmacologic regimen. Triple antithrombotic therapy was maintained, pending cardiac MRI to confirm thrombus resolution.

Conclusions

In patients with ischemic cardiomyopathy, LV dysfunction, and apical thrombus, CTO PCI can lead to marked functional recovery and thrombus regression. Comprehensive imaging follow-up and tailored medical therapy are essential in optimizing outcomes and guiding anticoagulation strategies. This case supports aggressive, guideline-based management in complex ischemic settings.

CORONARY: CHRONIC CORONARY SYNDROME, PHARMACOLOGY

P10

HIGH LIPOPROTEIN(A) LEVELS ARE ASSOCIATED WITH INCREASED ADENOSINE 5'-DIPHOSPHATE PLATELET REACTIVITY IN PATIENTS WITH ISCHEMIC HEART DISEASE TREATED WITH ANGIOPLASTY ON DUAL ANTIPLATELET THERAPY

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Introduction

High lipoprotein(a) levels are associated with an increase in major adverse cardiovascular events in patients with ischemic heart disease treated with angioplasty. Although the main explanations of this phenomenon are deemed to be the atherosclerotic disease progression and the higher incidence of intrastent restenosis, scarce data are available on the impact of high levels of lipoprotein(a) on adenosine 5'-diphosphate (ADP) in patients treated with angioplasty on dual antiplatelet therapy.

Methods

We enrolled 272 consecutive patients with ischemic heart disease (either chronic and acute coronary syndromes) treated with angioplasty on dual antiplatelet therapy. In these patients we analyzed either lipoprotein(a) levels, determined by an ELISA assay ([Apo(a) ELISA; Mercodia, Uppsala, Sweden] with levels > 300 mg/dL considered over the normal range, and post-treatment platelet reactivity, investigated by measuring platelet aggregation by ADP 10 µmol and values >70% were defined as high ADP platelet reactivity.

Results

In patients with higher levels of lipoprotein(a) (n= 107) we observed significantly higher values of ADP induced platelet reactivity respect to those with lower lipoprotein(a) values (n = 165) (50.29 ± 24.01 vs. 43.98 ± 20.99, p = 0.043). In the overall group of patients a significant correlation was found between lipoprotein(a) and ADP induced platelet reactivity (r = 0.202, p < 0.001). Moreover, patients with values of lipoprotein(a) > 300 mg/dL showed a higher prevalence of ADP platelet reactivity higher than 70% vs. those with values of lipoprotein(a) < 300 mg/dL (25.23% vs. 13.94%, p = 0.015).

Conclusions

The results of the present study suggest a possible association between lipoprotein(a) and ADP induced platelet reactivity, that could indicate

another possible mechanism through which high levels of lipoprotein(a) could increase the rate of cardiovascular events in patients treated with angioplasty. This result, if confirmed in a selected population of patients, such as those affected by chronic coronary syndrome in whom clopidogrel is more frequently used, could stimulate research to analyze the possible effect of novel drugs targeting lipoprotein(a), such as lepodisiran or olpasiran, in reducing also ADP induced platelet reactivity.

P11

INCLISIRAN IN PAZIENTI AD ALTO RISCHIO: UNA STRATEGIA IPOLIPEMIZZANTE A BASSO CARICO AMBULATORIALE CON IMPATTO ELEVATO SULL'ADERENZA E SUI TARGET LIPIDICI

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L'aderenza terapeutica è un fattore critico nel controllo del rischio cardiovascolare residuo nei pazienti ad alto rischio. Inclisiran, grazie al suo meccanismo d'azione su PCSK9 e alla somministrazione semestrale, rappresenta una strategia efficace per ridurre l'LDL-C minimizzando il carico assistenziale. Sono stati inclusi 40 pazienti consecutivi ad alto rischio cardiovascolare (coronaropatia documentata, diabete o vasculopatia periferica), non a target lipidico (LDL-C ≥70 mg/dL) nonostante statina ± ezetimibe. Tutti hanno ricevuto inclisiran secondo protocollo (giorno 0 e giorno 90). Il follow-up è stato condotto con un'unica valutazione laboratoristica a 3 e 9 mesi. Endpoint primari: percentuale di pazienti a target LDL-C <55 mg/dL e numero medio di accessi ambulatoriali richiesti.

L'età media era di 64 anni; il 70% maschi, il 35% diabetici. A 3 mesi, l'88% dei pazienti aveva raggiunto un LDL-C <55 mg/dL; a 9 mesi, il target era mantenuto nel 90%. Il numero medio di accessi ambulatoriali per paziente durante il follow-up è stato pari a 1,2. Nessun paziente ha interrotto la terapia; nessun evento avverso significativo è stato registrato. Il 100% dei pazienti ha confermato volontà di proseguire la terapia per la semplicità di gestione.

Inclisiran ha dimostrato un'elevata efficacia nella riduzione dell'LDL-C e un impatto positivo sull'aderenza terapeutica grazie al basso carico ambulatoriale richiesto. Questa strategia real-world è facilmente integrabile nella pratica clinica e consente di ottimizzare la gestione dei pazienti ad alto rischio cardiovascolare, riducendo la necessità di controlli frequenti e migliorando il raggiungimento dei target lipidici raccomandati.

P12

PRETRATTAMENTO CON INCLISIRAN PRIMA DELLA PCI PROGRAMMATA: UNA STRATEGIA REAL-WORLD PER OTTIMIZZARE IL PROFILO LIPIDICO PERI-PROCEDURALE

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Il controllo intensivo del colesterolo LDL-C è raccomandato nelle linee guida ESC per pazienti con coronaropatia nota. Nei soggetti con indicazione a PCI programmata, il pretrattamento con inclisiran potrebbe consentire di ottimizzare il profilo lipidico prima della procedura, favorendo un migliore controllo del rischio residuo nel periodo peri-procedurale. Sono stati osservati 20 pazienti consecutivi con cardiopatia ischemica nota e indicazione a PCI programmata sulla base di imaging non invasivo (scintigrafia miocardica o angio-TC coronarica). Tutti i pazienti erano in terapia con statina ± ezetimibe e presentavano LDL-C ≥70 mg/dL. È stato avviato pretrattamento con inclisiran almeno 30 giorni prima della PCI. L'LDL-C è stato misurato al basale, prima della PCI e a 3 mesi dopo la procedura. Endpoint primario: percentuale di pazienti con LDL-C <55 mg/dL al momento della PCI.

L'età media era di 66 anni; il 75% dei pazienti era di sesso maschile; il 30% diabetico. Al momento della PCI, 17 pazienti su 20 (85%) avevano raggiunto un valore di LDL-C <55 mg/dL. A 3 mesi, il target era mantenuto nel 90% dei casi. Nessun evento avverso correlato al trattamento è stato segnalato. Il pretrattamento è stato ben tollerato e ha richiesto un solo accesso ambulatoriale per la somministrazione iniziale.

Il pretrattamento con inclisiran prima di PCI programmata si è dimostrato efficace e sicuro nel ridurre i livelli di LDL-C in pazienti con coronaropatia nota. Questa strategia ha consentito di raggiungere un controllo lipidico ottimale già al momento della procedura, con risultati sovrapponibili o superiori a quelli osservati negli studi clinici. L'approccio è facilmente integrabile nella pratica clinica e potenzialmente utile per migliorare la gestione del rischio aterotrombotico peri-PCI.

CORONARY: DEB

P13

COMPARATIVE PROGNOSTIC VALUE OF DIAMETER STENOSIS, MURRAY LAW-BASED QUANTITATIVE FLOW RATIO AND RADIAL WALL STRAIN AFTER DRUG-COATED BALLOON IN DE NOVO CORONARY LESIONS

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Introduction

Drug-coated balloon (DCB) represents a valid alternative to drug-eluting stents for the treatment of *de novo* coronary lesions. However, procedural predictors of long-term outcomes remain poorly defined, and angiographic assessment is routinely limited to a subjective visual estimation of residual stenosis and dissection. New computational angiography-derived analyses offer integrated anatomical, functional, and biomechanical information on lesions. We aim to evaluate the predictive value of diameter stenosis (DS), Murray's law-based flow ratio (μ FR), and radial wall strain (RWS).

Methods

De novo lesions treated with DCB-only strategy were retrospectively selected. The clinical outcome was major adverse cardiovascular events (MACEs), including target vessel revascularization (TVR), myocardial infarction (MI), and all-cause death. Receiver operating characteristic (ROC) curves were used to detect the most accurate predictors, among baseline, post-predilation, post-DCB, and delta-changes values of DS, μ FR, and RWSmax. Kaplan-Meier and Cox analyses assessed predictive ability of selected variables dichotomized by first quartile. Analyses were repeated on a propensity score matched (PSM) subgroup to minimize clinical confounders.

Results

A total of 264 lesions were included. During a median follow-up of 312 [203-545] days, 28 MACEs occurred. Post-DCB DS and μ FR, and post-predilation RWSmax were selected as MACE predictors by ROC analysis. MACE-free survival differed significantly for final DS >29% vs \leq 29% (log-rank = 0.018, HR = 2.46, 95% CI: 1.14 - 5.36) and μ FR \leq 0.90 vs >0.90 (log-rank = 0.003, HR = 3.68, 95% CI: 1.71 - 7.87), findings that remained significant after adjustment through PSM. No significant differences in MACE-free survival emerged for post-predilation RWSmax >20.2% vs \leq 20.2%.

Conclusions

Post-procedural DS and μ FR predict clinical outcomes after DCB treatment of *de novo* lesions. The role of RWS warrants further investigation, particularly in drug-specific subgroups.

P14

PACLITAXEL-COATED BALLOON WITH UREA OR IOPROMIDE AS THE EXCIPIENT FOR TREATMENT OF CORONARY ARTERY DISEASE: A PROPENSITY-SCORE ADJUSTED COMPARISON

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Background

Drug-coated balloons (DCBs) are increasingly used to treat coronary artery disease, but their efficacy varies based on the eluted drug and excipient. No head-to-head comparisons have been conducted between the newly introduced Prevail paclitaxel-coated balloon (PCB), which uses urea as an excipient, and other commercially available PCBs.

Methods

Consecutive patients undergoing DCB angioplasty with either the Prevail PCB or the Sequent Please PCB (which uses iopromide as the excipient) in 2 Italian Institutions from 2021 to 2024 were retrospectively enrolled. The primary endpoint was target lesion failure (TLF), including target lesion revascularization (TLR), target vessel myocardial infarction and cardiac death, at 1 year. Clinical outcomes were compared through propensity score adjustment for selected clinical and angiographic covariates.

Results

A total of 448 patients were included, with 211 patients (240 lesions) treated with Prevail and 237 patients (287 lesions) treated with Sequent Please. The prevalence of in-stent restenosis (ISR) was 30% in the Prevail group and 23% in the Sequent group (p = 0.070). At 1 year, the cumulative incidence of TLF was 8.1% in both groups (adjusted HR: 0.90, 95% CI: 0.27-3.00). Rates of all secondary endpoints were also similar. Subgroup analyses showed no significant interaction between treatment groups and any of the pre-specified subgroups, including lesion type (*de novo* vs ISR; $p_{interaction}$ = 0.848).

Conclusions

In this first head-to-head comparison, the Prevail and Sequent Please PCBs demonstrated comparable safety and efficacy profiles at 1 year.

P15

CLINICAL OUTCOMES OF DRUG-ELUTING BALLOON ANGIOPLASTY FOR DE NOVO LESIONS VERSUS IN-STENT RESTENOSIS: A SINGLE-CENTER RETROSPECTIVE STUDY

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Introduction

Drug-eluting balloon (DEB) angioplasty is increasingly used in the treatment of *de novo* coronary artery disease (CAD) and for managing in-stent restenosis (ISR). DEBs deliver a localized antiproliferative drug without implanting a permanent metallic scaffold. This study aimed to compare the clinical outcomes of DEB angioplasty in patients with *de novo* lesions versus those with ISR treated at our hospital.

Methods

Baseline clinical and procedural data were prospectively collected for patients undergoing DEB angioplasty for either *de novo* lesions or ISR between August 2021 and August 2024. The primary endpoint was the incidence of major adverse cardiovascular events (MACE) at the longest available follow-up, defined as the composite of cardiac death, myocardial infarction (MI), and target lesion revascularization (TLR).

Results

A total of 148 patients (176 lesions) were included: 78 patients with *de novo* lesions and 70 with ISR. The median follow-up duration was 473 days. The mean age was 68.7 years (67.4 \pm 1.2 years in the *de novo* group vs 70.3 \pm 1.2 years in the ISR group, p=0.06); 83.7% were male (82.8% vs 84.6%, p=0.72). Acute coronary syndrome was the clinical presentation in 52.7% of lesions (48.7% vs 54.2%, p=0.71). Diabetes (25.3% vs 42.0%, p=0.031), dyslipidemia (64.5% vs 82.6%, p=0.014), and prior MI (22.7% vs 28.2%) were more frequent in the ISR group. MACE occurred in 10.1% of patients with *de novo* lesions versus 28.6% in those with ISR (p=0.006). Death rates were 0% vs 2.8% (p=0.14); MI occurred in 2.5% vs 11.4% (p=0.032); TLR was required in 3.8% vs 12.8% (p=0.027), respectively.

Conclusions

PCI using drug-eluting balloons is associated with significantly better clinical outcomes in *de novo* lesions compared to in-stent restenosis.

P16

LESION PREPARATION MATTERS: PROGNOSTIC VALUE OF PREDILATION IN DRUG-COATED BALLOON TREATMENT OF DE NOVO CORONARY LESIONS

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Introduction

Optimal lesion predilation is considered a fundamental step in drug-coated balloon (DCB)-based percutaneous coronary intervention (PCI). Although published data exist evaluating the clinical impact of optimal predilation in the setting of in-stent restenosis treatment, there is a lack of evidence in the context of *de novo* lesion treatment. We aimed to evaluate the prognostic value of optimal vessel preparation in *de novo* coronary lesions treated with DCB.

Methods

We performed a retrospective study including *de novo* lesions treated with a DCB-only strategy at a single high volume center from February 2019 to January 2025. We excluded lesions that required bailout stenting. Lesions were dichotomized into two groups according to quantitative angiography after predilation: optimal predilation group with \leq 30% residual stenosis or suboptimal predilation group with >30% residual stenosis and/or presence of coronary dissection. Clinical follow up was performed by outpatient visits, telephone interviews and from hospital records of any readmission. The primary endpoint was the composite of major adverse cardiovascular events (MACE), combining death, myocardial infarction (MI), target lesion failure (TLF) and target vessel revascularization (TVR). Survival analysis was conducted to assess differences between the two groups.

Results

A total of 250 lesions were included in the study, of which 89 (35.6%) were classified into the optimal predilation group and the remaining 161 (64.4%) in the suboptimal predilation group. We found a significant higher frequency of acute coronary syndrome as indication for the procedure in the suboptimal group (23.6% vs 13%, p=0.039), while in the optimal group the prevalence of hypertension and history of prior PCI were significantly higher (57.3% vs 68.3%, p=0.041 and 32.6% vs 44.1%, p=0.049 respectively). In the suboptimal group lesions were significantly longer (22.84 \pm 7.57 vs 19.63 \pm 5.95 mm, p=0.0009) and with higher degree of stenosis (54.64% \pm 11.93 vs 49.02% \pm 13.09, p=0.0001). The suboptimal group showed lower final minimal lumen diameter and higher degree of residual stenosis (1.73 \pm 0.35 vs 1.89 \pm 0.40 mm, p=0.0017 and 27.82% \pm 9.46 vs 18.6% \pm 9.28, p=0.0001 respectively). The median follow-up period was 371 days (interquartile range 260 - 631 days). The cumulative TLF and TVR rates, MI and MACE were numerically higher in the suboptimal group, but these differences did not reach statistical significance (6.7% vs 2.5%, 6.7% vs 3.7%, 4.5% vs 1.2%, 15.7% vs 9.3%, respectively). At Kaplan-Meier survival analysis the incidence of MACE was significantly higher in the suboptimal predilation group (p=0.0007). Multivariate Cox proportional hazard analysis, adjusting for several con-

founding variables, showed that a suboptimal result after predilation was an independent predictor of MACE (HR 3.91 CI 1.68-9.10, p=0.002).

Conclusions

Our study demonstrated that optimal lesion predilation improves clinical outcomes in *de novo* coronary lesions treated with DCB-based PCI and that suboptimal predilation is an independent predictor of adverse outcomes. Particular attention has to be given to patients with long, high degree stenosis and in the setting of acute coronary syndrome, in whom there is higher risk of suboptimal lesion preparation.

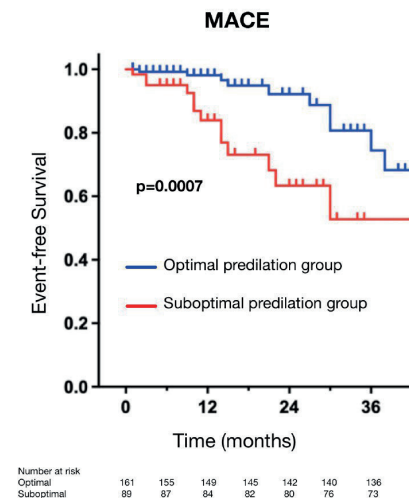


Figure 1. Kaplan-Meier curves for MACE event free survival analysis.

P17

LONG-TERM EFFECTS OF SIROLIMUS DEB IN REAL-WORLD PATIENTS: FINDINGS FROM A SINGLE-CENTER ANALYSIS

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Introduction This study aims to investigate the long-term efficacy and safety of a sirolimus-eluting drug-coated balloon (S-DCB) in the treatment of coronary artery disease.

Methods Patients undergoing PCI with S-DCB for either native vessel disease or in stent restenosis were followed in order to assess the long term rate of MACE, a composite of death, myocardial infarction, and target lesion revascularization. Secondary endpoints were target lesion revascularization, myocardial infarction and all-cause death at last follow up.

Results A total of 109 patients were enrolled. The average age was 68 ± 9 years, diabetic patients were 38%. *De novo* lesions (small vessels) were 55%, in-stent restenosis 45%. After a median follow up of 6 years, major adverse clinical events occurred in 16.5% of the patients, target lesion revascularization in 11.9%, MI in 5.5% and death in 2.8%. The primary composite outcome occurred less frequently in the ISR cohort (10% vs 24.5%; HR 0.399; CI 95% 0.149-0.866; p = 0.006), mostly driven by less target lesion revascularization in the *de novo* lesions cohort (6.7% vs 18.4%; HR 0.352; CI 0.108-1.150; p = 0.84).

Conclusions this study confirms the safety and efficacy of a sirolimus-eluting DEB in a broad population of coronary artery disease including small vessels and ISR patients at long term follow-up.

CORONARY: IMAGING

P18

PLAQUE COMPOSITION AND FUNCTIONAL CHARACTERISTICS AFTER BIORESORBABLE SCAFFOLDS RESORPTION

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Introduction

Bioresorbable scaffolds (BRS) were developed as a potentially transformative innovation in PCI, providing temporary mechanical support to the treated vessel segment, with the expectation that progressive biore-

sorption would restore the vessel's native anatomy and physiology, ultimately "uncaging" the artery and preserving its suitability for future interventions

Among the most extensively studied devices, the Poly L Lactic Acid-Biopolymer (PLLA) Absorb and the magnesium resorbable scaffold (MRS) Magmaris stand out as representative of two different technological approaches, each with unique material properties, resorption profiles, and clinical outcomes.

Randomized clinical trials investigating the performance of the Absorb BRS confirmed non-inferiority compared to DES in terms of target lesion failure (TLF) at one year, but disappointing mid-term outcomes were reported in clinical trials with this device.

The results with the newer Magmaris platform are promising, but robust head-to-head comparisons with the Absorb scaffold remain limited, particularly regarding vessel healing and plaque characteristics following complete bioresorption.

Methods

This study was designed to conduct a comprehensive, direct comparison of the Magmaris and Absorb platforms in patients undergoing PCI with either Absorb BRS or Magmaris MRS, followed by coronary angiographic and optical coherence tomography (OCT) assessment after complete scaffold resorption.

The primary aim was to evaluate their respective impacts on plaque composition, scaffold integration, and vascular healing after complete resorption of the device.

Results

Plaque characterization revealed significant differences between the MRS and BRS cohorts. Following resorption, the MRS group exhibited a higher symmetry index and lower plaque volume compared to the BRS group.

Regarding plaque composition, the MRS group demonstrated a smaller fibrotic plaque component and a reduced fibrous plaque area, but lipid content was significantly higher.

MRS group had a higher proportion, but not statistically significant, of plaques classified as "risky" and a greater lipid-to-cap ratio.

Conclusions

Our study demonstrates that both Magmaris MRS and Absorb BRS provide reassuring physiological outcomes, as reflected by comparable OFR measurements following complete resorption. These findings indicate that, despite differences in material composition and degradation timelines, both scaffolds maintain functional vessel patency and flow characteristics over the long term, supporting the broader clinical viability of BRS in restoring coronary physiology after PCI.

P19

MULTIMODAL ASSESSMENT WITH ANGIOGRAPHY-DERIVED μFR, RWS AND OCT OF RESORBABLE MAGNESIUM SCAFFOLD: ACUTE AND LONG-TERM RESULTS

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Introduction

Resorbable magnesium scaffold (RMS) provides temporary mechanical support to the vessel wall after angioplasty, subsequently being gradually resorbed by the body. Angiography-derived indices such as Murray's quantitative flow ratio (μFR) and radial wall strain (RWS) have demonstrated utility in evaluating plaque physiology and biomechanics. Their role in identifying clinically relevant events after RMS implantation remains understudied. We describe our center's real-world experience with angiography-based μFR and RWS in patients undergoing RMS implantation.

Methods

Between January 2016 and December 2024, 401 patients received at least one RMS at our institution. Of these, 83 underwent repeat coronary angiography, mostly for clinical indications (median follow-up 18 months). Angiography-based μFR and RWS were retrospectively assessed pre-PCI, immediately post-PCI, and at angiographic follow-up. Target lesion failure (TLF) and target lesion revascularization (TLR) were adjudicated with OCT analysis.

Results

Among the 401 patients, only 83 required repeat angiography; overall, we recorded 29 TLF events (7%), including 24 TLR events (6%), all confirmed by OCT. Subgroup with angiographic follow up was analyzed with angio-based μFR and RWS. Significant improvement from pre- to post-PCI was observed for both μFR (pre-PCI: 0.66 ± 0.20 vs post-PCI: 0.94 ± 0.04, p<0.001) and RWS (pre-PCI: 23.8 ± 7.67% vs post-PCI: 11.0 ± 2.5%, p<0.001), indicating effective plaque passivation. At follow-up, mean μFR slightly decreased to 0.87 ± 0.13 and RWS increased to 14.2 ± 4.2%. Angiography-based indices demonstrated good discriminatory performance in identifying OCT-confirmed TLR events, with AUCs of 0.710 for μFR and 0.728 for RWS.

Conclusions

Our experience supports that RMS effectively passivates plaques, de-

monstrated by favorable μ FR and RWS changes post-PCI. Importantly, μ FR and RWS assessed at follow-up angiography reliably identified OCT-confirmed TLF events. These findings suggest a potential role for routine angiography-based indices in clinical practice, possibly reserving OCT for more uncertain or borderline cases.

P20

TRATTAMENTO CHIRURGICO DI UNA GRANDE FISTOLA CORONARICA TRA ARTERIA DISCENDENTE ANTERIORE E ARTERIA POLMONARE, DI GROSSO ANEURISMA SACCELLARE E DI PATOLOGIA ATROSCLEROTICA TRIVASALE

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Introduzione

Un uomo di 60 anni con ipercolesterolemia e ipertensione si presentava con sindrome coronarica acuta (ACS) al PS dell'ospedale di Rovereto. L'elettrocardiogramma (ECG) mostrava inversione dell'onda T in V4-V6, D1 e aVL mentre l'ecocardiogramma transtoracico risultava normale, senza anomalie della cinetica ventricolare sinistra (LV).

Metodi

L'angiografia coronarica ha mostrato lesioni aterosclerotiche critiche nella parte distale dell'arteria coronaria circonflessa sinistra (LCx, culprit lesion), occlusione totale cronica dell'arteria coronaria destra (RCA), stenosi critica nella discendente anteriore sinistra (LAD) e una fistola coronarica (CAF) proveniente dalla LAD prossimale e connessa all'arteria polmonare (PA) attraverso un aneurisma coronarico sacculare (12x12x10mm).

Risultati

Una Angio-Tac (MDCT) confermava la presenza dell'aneurisma coronarico sacculare con un'indicazione a trattamento correttivo. Il paziente è stato operato di aneurismorrafia con chiusura della fistola tra LAD e PA con bypass (CABG) su LAD, RCA e LCx.

Conclusioni

Il decorso post-operatorio è stato privo di complicanze ed il paziente è stato dimesso al 14° giorno post-operatorio. L'Angiotac è stata utile per comprendere la relazione spaziale tra la CAF e la connessione con l'arteria polmonare.

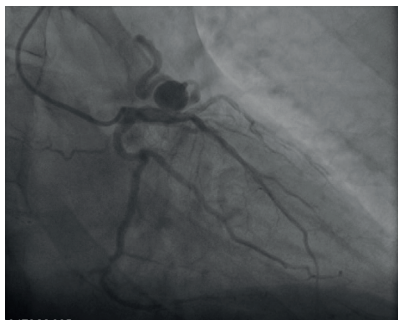


Figura 1-A. La coronarografia mostra l'aneurisma sacculare originante dal tratto prossimale della DA connesso con l'arteria polmonare (freccia arancione). Più sotto, la lesione colpevole nella arteria Circonflessa (freccia verde). CAG showed saccular aneurysm originating from the proximal portion of the LAD and the connection with PA (orange arrows). Under, the culprit lesion on the Circumflex coronary artery (green arrow).

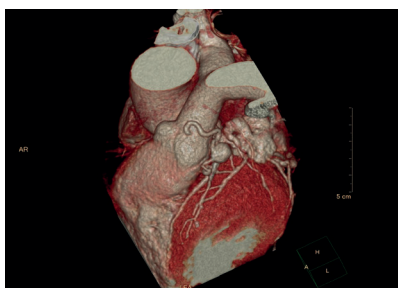


Figura 2-A. L'Angio-TC mostra la fistola tra DA e Arteria Polmonare e, nella parte media, l'aneurisma sacculare e il tratto di efflusso dall'aneurisma alla Arteria Polmonare. Computed tomography coronary angiography showed a fistula from the LAD to the PA and in the middle part a saccular aneurysm and the outflow tract of vessel from aneurysm to PA (arrows).

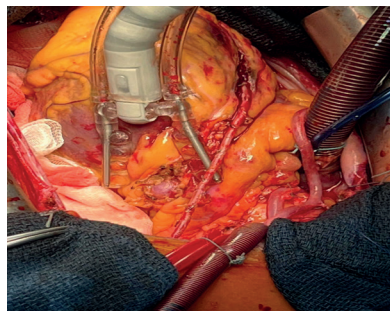


Figura 2-B. Immagine intraoperatoria: la fistola tra la DA è stata visualizzata prima della incisione dell'aneurisma (freccia bianca). Intraoperative image: fistula from the LDA was visualized before the incision of the aneurysm (white arrows).

P21

RUOLO DELL'ECOGRAFIA INTRAVASCOLARE CONTRO ANGIOGRAFIA NELL'OTTIMIZZAZIONE DEL TRATTAMENTO PERCUTANEO DELLE LESIONI DI BIFORCAZIONE DEL TRONCO COMUNE

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Introduzione

Numerose evidenze in letteratura suggeriscono come l'utilizzo routinario dell'ecografia intravascolare (IVUS) per la PCI del tronco comune sia associato ad una riduzione degli eventi cardiovascolari avversi maggiori (MACE) con meccanismi in parte ancora da chiarire. L'obiettivo di questo studio è analizzare il ruolo dell'IVUS nella guida e nell'ottimizzazione della PCI della biforcazione del tronco comune non protetto, confrontandolo con un approccio guidato esclusivamente dall'angiografia.

Metodi

Tra Dicembre 2021 e Novembre 2024, 116 pazienti con lesioni de novo coinvolgenti la biforcazione del tronco comune non protetto candidati a rivascularizzazione per via percutanea sono stati arruolati retrospettivamente e suddivisi in due gruppi in base all'utilizzo o meno dell'IVUS. Sono stati inclusi sia pazienti con diagnosi d'ingresso di sindrome coronarica acuta (angina instabile, NSTEMI, STEMI con lesione culprit non coinvolgente la biforcazione del tronco comune) che cronica. I dati demografici, clinici e procedurali sono registrati e analizzati. Il follow-up è stato eseguito tramite visita ambulatoriale o contatto telefonico. Gli endpoints primari sono stati: la valutazione delle differenze nella scelta delle dimensioni dello stent del vaso principale (MV) e del pallone per l'ottimizzazione del segmento prossimale (POT); l'incidenza di fallimento della lesione target (TLF), composto che include la morte cardiovascolare, l'infarto miocardico del vaso target e la rivascularizzazione del vaso target guidata dalla clinica. L'endpoint secondario dello studio è stato l'incidenza di eventi cardiovascolari avversi (MACE, composto di morte per tutte le cause, infarti miocardici e rivascularizzazioni clinicamente guidate).

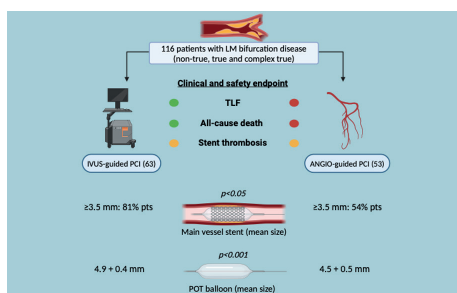
Risultati

L'età media della popolazione è risultata 74 ± 11 anni nel gruppo ANGIO-guided e 72 ± 9 anni nel gruppo IVUS-guided con una maggiore prevalenza di individui di sesso maschile in quest'ultimo gruppo (90.5% vs 71.7%, $P=0.02$). La complessità anatomica del quadro angiografico, espressa mediante Syntax Score I, è risultata ben bilanciata nei due gruppi (24 ± 11 nel gruppo ANGIO-guided vs 24 ± 8 nel gruppo IVUS-guided, $P=0.94$). Una biforcazione complessa, in accordo con i criteri Definition, è stata evidenziata nel 17% del gruppo ANGIO-guided e nel 14.3% del gruppo IVUS-guided ($P=0.88$). La differenza più rilevante tra i due gruppi è emersa nel sizing dello stent del MV e del pallone da POT utilizzato: difatti il 96.9% dei pazienti del gruppo IVUS-guided ha ricevuto uno stent ≥ 3.5 mm rispetto al 79.2% del gruppo ANGIO-guided ($P=0.03$); inoltre, un pallone da POT con diametro ≥ 5 mm è stato scelto nel 63.5% nel gruppo IVUS-guided rispetto al 34% del gruppo ANGIO-guided ($P=0.003$). Il tempo medio totale di follow-up è stato di 452 ± 263 giorni. L'endpoint primario composto TLF si è verificato in 5 pazienti (9.8%) del gruppo ANGIO-guided e in nessun paziente del gruppo IVUS-guided (0%, $P=0.04$). Per quanto riguarda l'endpoint composto secondario MACE, è stato osservato in 8 pazienti (15.1%) del gruppo ANGIO-guided e in nessun paziente del gruppo IVUS-guided ($P < 0.01$).

Conclusioni

L'IVUS è uno strumento fondamentale nel trattamento della patologia del tronco comune e della sua biforcazione. I risultati del presente studio hanno dimostrato come l'imaging intracoronarico consenta una scelta più adeguata in termini di sizing dei materiali, in linea con l'evidenza

scientifico corrente in base alla quale una corretta espansione e apposizione dello stent fornisca un vantaggio in termini prognostici.



CORONARY: PCI LESION/PATIENT SUBSETS

P22

COMPARING EXTERNAL MINICRUSH VS TAP STENTING FOR TREATMENT DE NOVO COMPLEX CORONARY BIFURCATION: INSIGHTS FROM THE TREX STUDY

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Introduction

During percutaneous coronary intervention (PCI) for bifurcation lesions, single stenting of the main branch (provisional stenting) is the preferred approach, and stenting of the side branch is only recommended for inadequate result of the side branch. However, double stenting of both, the main and the side branch, is still needed in 5-36% of bifurcation lesions, especially in patients with complex coronary bifurcation lesions in which the double stenting approach is associated with a significant improvement in clinical outcomes compared with the provisional stenting approach.

Various techniques have been developed for this purpose, which are now used in daily practice. The External Minicrush (EXM) and T-and-protrusion (TAP) techniques are double stenting techniques used to intentionally treat complex coronary bifurcation lesions. Nevertheless, no study has compared EXM and TAP in patients requiring side branch stenting. To fill this gap in evidence, we performed the TREX registry study which comparing procedural and clinical outcomes of EXM and TAP stenting techniques in patients undergoing PCI for complex coronary bifurcation lesions.

Methods

The TREX registry (Clinical Trials NCT:06484647) is a multicentric collaborative study involving several hospitals in Italy. Protocol data were collected in accordance with regulations set forth by institutional review boards and the study was approved by the institutional review committees and conducted in accordance with the declaration of Helsinki. All patients with coronary artery disease at a bifurcation who received intentional stenting with the EXM or TAP techniques were included in the study. Those initially treated with the provisional technique and needing side branch stenting due to suboptimal results were excluded.

The primary endpoint of interest is Target Lesion Failure (TLF) a composite of cardiac death, target lesion related myocardial infarction and target lesion revascularization (TLR). The secondary endpoint of interest is Major Adverse Cardiac Events (MACE) a composite of all-death, target vessel myocardial infarction (TVMI) and target vessel revascularization (TVR). The primary safety endpoint is Definite/Probable stent thrombosis.

Results

Primary and secondary endpoint occurred in 11.1% and 23.5% of patients respectively with a greater incidence of TLF in the TAP group compared to EXM group (15.1% vs 7.8%, p=0.01).

Definite/Probable stent thrombosis was founded in 3% of patients and was greater in the TAP group compared to EXM group (5.7% vs 0.8%, p<0.01).

Conclusion

External Minicrush was associated with a fewer TLF and Definite/Probable ST compared to TAP for treating de novo complex coronary bifurcation lesion.

P23

NOTHING LEFT BEHIND—TWICE: RMS FOR TREATMENT OF RMS FAILURE WITH ANGIOGRAPHIC FOLLOW-UP (SCAFFOLD-IN-SCAFFOLD TECHNIQUE), A SINGLE CENTER EXPERIENCE

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Introduzione

Una delle principali complicanze dell'angioplastica coronarica con Scaffold Riassorbibili al Magnesio (RMS) resta la target lesion failure (TLF) a distanza. Tuttavia, la strategia ottimale per il suo trattamento non è ben definita. In particolare, non è noto se continuare a perseguire con una strategia "nothing left behind" — consistente nell'impianto di un secondo scaffold possa rappresentare una alternativa all'impiego di stent metallici medicati (DES) in alcuni casi selezionati. Il presente studio descrive l'esperienza del nostro centro nel trattamento della restenosi da Magmaris mediante impianto di un secondo scaffold Magmaris (strategia scaffold-in-scaffold), con follow-up procedurale e clinico dedicato.

Metodi

Nel nostro centro da Settembre 2016 a oggi sono state trattate 574 lesioni con scaffold Magmaris/Freespöve in 442 pazienti. A un anno di follow-up, 31 TLF (5.4%) sono state documentate: di queste, 16 trattate con DES (51.6%), 14 con strategia scaffold-in-scaffold (45.2%) e 1 (3.2%) con pallone medicato. Nel presente abstract riportiamo i dati relativi al sottogruppo di lesioni trattato con strategia scaffold-in-scaffold. Tutti i pazienti secondo nostro protocollo interno hanno effettuato un follow-up clinico e anche angiografico ad un anno dall'impianto e successivamente al trattamento con scaffold-in-scaffold è stato programmato un ulteriore follow-up angiografico ad un anno. Endpoint della presente analisi è l'incidenza di TLF a 12 mesi dal trattamento con tecnica scaffold-in-scaffold.

Risultati

La maggior parte delle lesioni erano trattate nel contesto di infarto miocardico acuto (85,7% così suddivisi: 5 Culprit Lesion di STEMI, 3 Non culprit lesion di STEMI, 4 NSTEMI). In 2 casi si trattava invece di pazienti con malattia coronarica stabile (14,3%). La media degli scaffold impiantati per paziente era 2,4 con una lunghezza media di 58,8 mm. L'imaging intracoronario pre o post angioplastica è stato impiegato nel 100% dei casi, per la maggior parte mediante tomografia a coerenza ottica (OCT). La strategia di impianto (predilatazione, sizing e postdilatazione) è stata applicata in modo ottimale, con una predilatazione effettuata nell'85% dei pazienti e una postdilatazione effettuata nel 100%. In 7 casi l'operatore ha scelto un pallone sovradimensionato di 0,5mm rispetto allo scaffold per la postdilatazione.

I pazienti avevano elevati valori di colesterolo LDL con valori medi di 144 mg/dL. Tutti i pazienti venivano dimessi in doppia terapia antiaggregante (DAPT) con inibitore potente del recettore P2Y12 (ASA + prasugrel/ticagrelor).

L'indicazione alla seconda procedura era per la maggior parte dei pazienti il controllo programmato ad un anno (11/14), mentre in 1 caso si trattava di NSTEMI e in un altro di Angina instabile, con entrambi tali eventi che si verificavano a 2 mesi dall'impianto dello scaffold. Un caso particolare è quello di un paziente che, con ottimo esito di scaffolding a 12 mesi, si è ripresentato con ripresa di angina a bassa soglia dopo 44 mesi dal primo impianto di scaffold presentando progressione di malattia nella sede di impianto del precedente scaffold attribuibile a processo neo-aterosclerotico.

La restenosi ha interessato i seguenti segmenti: in 2 casi IVA prossimale, in 7 casi IVA media, in 4 casi Coronaria destra media, in 1 caso Circonflessa prossimale. Le restenosi sono state trattate in sede di failure del precedente RMS con impianto di 1 RMS in 7 casi, 2 RMS in 4 casi, 3 RMS in 3 casi; sempre con diametro 1:1 rispetto al precedente. La lunghezza media degli scaffold nella seconda procedura era di 30,5 mm. Anche in questa fase è stato impiegato imaging intracoronario nel 100% dei casi. La predilatazione è stata effettuata nel 79% dei casi e la post-dilatazione nel 100% dei casi. I pazienti avevano un controllo subottimale dei valori di colesterolo LDL con valore medio di 49,9 mg/dL, e 5 pazienti non a target (colesterolo LDL >55 mg/dL). Tutti i pazienti avevano continuato DAPT sino al momento della seconda procedura.

Nella coorte esaminata, a 12 mesi al follow-up angiografico programmato, 10 pazienti (71%) non presentavano segni di restenosi o eventi cardiovascolari maggiori, 3 pazienti, seppur asintomatici, presentavano segni di angiografici di restenosi (21%) e 1 solo paziente si presentava con STEMI inferiore per trombosì di RMS (7%) a sei mesi dalla seconda procedura configurando una incidenza globale di TLF a 12 mesi pari a 29%.

Conclusioni

L'approccio scaffold-in-scaffold con Magmaris per la gestione della restenosi intrascaffold è una strategia affascinante, tecnicamente fattibile e efficace in alcuni casi ma gravata da ulteriori eventi cardiovascolari. Individuare eventuali predittori clinici, procedurali o correlati alla analisi di placca mediante imaging intracoronario (es. precoce recoil vs neo-aterosclerosi) capaci di predire il successo di tale strategia potrebbe guidare nella corretta selezione del paziente in cui impiantare un secondo scaffold nel segmento gravato da failure e perseguire un approccio "nothing left behind". Infine ulteriori dati in merito al potenziale utilizzo di pallone medicato sarebbero auspicabili per esplorare il loro potenziale utilizzo in questo setting. Perseguire un ottimale controllo dei fattori di rischio e una terapia ipolipemizzante aggressiva è certamente

necessaria per ridurre nel follow-up l'incidenza di eventi cardiovascolari imputabili a progressione di malattia.

CORONARY: PCI, COMPLICATIONS

P24

CLINICAL OUTCOMES OF BAILOUT STENTING AFTER DRUG-COATED BALLOON ANGIOPLASTY: A SYSTEMATIC REVIEW AND SINGLE-ARM META-ANALYSIS

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Introduction

Drug-coated balloon (DCB) angioplasty is an established alternative to drug-eluting stents (DES) in selected coronary lesions. However, bailout stenting (BOS) is often necessary after suboptimal DCB results. The safety profile of BOS after DCB angioplasty remains poorly defined.

Methods

We conducted a systematic review and meta-analysis following PRISMA 2020 guidelines. We searched PubMed, Embase, Scopus, and Cochrane CENTRAL up to March 2025. Studies were eligible if they reported clinical outcomes of patients undergoing BOS with DES after suboptimal DCB angioplasty. Studies with overlapping populations, abstract-only publications, or missing outcome data specific to BOS were excluded. Due to the lack of a homogeneous control group across included studies, a single-arm meta-analytic design was adopted. Pooled proportions for cardiac death (CD), myocardial infarction (MI), target lesion revascularization (TLR), and target vessel revascularization (TVR) were calculated using a random-effects model. Heterogeneity was assessed via I^2 and Baujat plots. Pooled incidence estimates were contextualized by descriptive comparison with clinical outcomes reported in contemporary benchmark trials evaluating second- and third-generation drug-eluting stents.

Results

Five studies were included (n = 4,129). The pooled incidence was 2% [95% CI: 1–2%] for CD, 3% [1–5%] for MI, and 5% [4–6%] for TVR, all with low or negligible heterogeneity. TLR incidence was 11% [1–31%], but after excluding an outlier study (Gao et al. 2024), it decreased to 5% [3–7%] with reduced heterogeneity ($I^2 = 33.3\%$). Risk of bias was moderate to serious for most observational studies, while Gao et al. showed low risk except for performance bias (open-label design). No formal tests for publication bias were conducted due to <10 studies per outcome.

Conclusions

In this meta-analysis, BOS after DCB angioplasty showed low rates of cardiac death, MI, and TVR, and an acceptable TLR rate comparable to modern DES trials. These findings support the safety of BOS in selected patients, justify further investigation in randomized controlled settings and may inform future decision-making in settings where DCB angioplasty is preferred but fails to yield optimal results.

P25

RADIAL ARTERY PSEUDOANEURYSMS: A SYSTEMATIC REVIEW OF ETIOLOGIES, MANAGEMENT, AND OUTCOMES

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Introduction

Radial artery pseudoaneurysms are rare but increasingly recognized complications of transradial access. Management strategies vary, and evidence is primarily based on small case series.

Methods

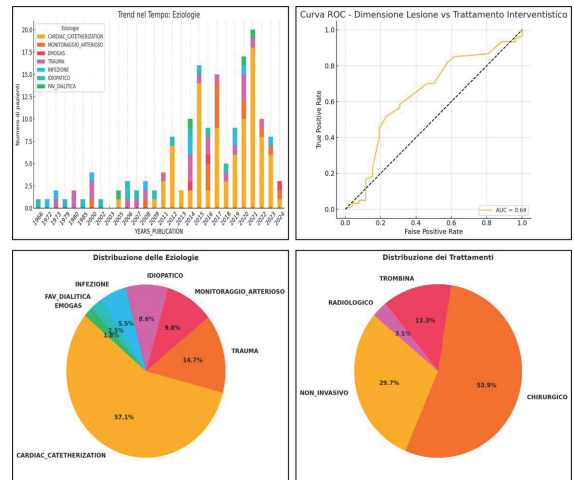
We performed a systematic review of published case series on radial pseudoaneurysms. Data were collected on clinical features, etiology, imaging, treatment strategies, and complications.

Results

A total of 163 patients were included (mean age 63.1 years). Females accounted for 42.9% of cases. The snuffbox approach was reported in 4.3% of patients. The most frequent etiologies were cardiac catheterization (57.1%), trauma (14.7%), and arterial line monitoring (9.8%). Ultrasound was the most used imaging modality (38.7%), followed by CT (4.9%). Treatment strategies included surgery (54.6%), non-invasive management (30.1%), thrombin injection (13.5%), and endovascular techniques (3.1%). A lesion diameter >25 mm was associated with increased likelihood of intervention (sensitivity 52%, specificity 77%). Complication rates were low: bleeding/anemia occurred in 4.9%, and infection in 5.5%. A trend toward less invasive strategies was observed in more recent publications.

Conclusions

Radial pseudoaneurysms, although rare, can be effectively managed with individualized strategies. Lesion size plays a key role in guiding treatment, and conservative or minimally invasive approaches are increasingly favored, with generally favorable outcomes.



CORONARY: PHYSIOLOGY

P26

CORONARY MICROVASCULAR ASSESSMENT BASED ON A SINGLE ANGIOGRAPHIC VIEW IN PATIENTS WITH STEMI

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Introduction

Coronary microvascular dysfunction (CMD) is a major determinant of failed myocardial reperfusion in patients with ST-elevation myocardial infarction (STEMI) undergoing primary percutaneous coronary intervention (pPCI). The angiography-derived index of microcirculatory resistance (IMR_{angio}) offers a wire-free method to assess CMD but has limitations that may reduce its widespread adoption in clinical care. This study aims to evaluate the diagnostic accuracy of Micro-IMR, a novel index derived from single-projection coronary angiography, by comparing it with AMR, and to assess its prognostic value in a large, multicenter cohort of STEMI patients. Finally, we seek to investigate the performance of a machine learning (ML)-based risk model incorporating micro-IMR and clinical variables to predict adverse outcomes.

Methods

This patient-pooled analysis included 525 STEMI patients from two prospective registries conducted at two Italian high-volume tertiary centers: the University Hospitals of Verona and Ferrara, between September 2019 and September 2022. Three indices- IMR_{angio}, AMR, and Micro-IMR- were calculated after pPCI by trained operators using two different semi-automated software.

Results

Out of 525 patients included, 277 (52.76%) presented with anterior STEMI, 86 (16.38%) were female, and 83 (15.81%) were diabetic. The mean age was 63.61 (±12) years. Micro-IMR showed excellent correlation with IMR_{angio} ($\rho = 0.99$, $P < 0.01$) and high accuracy in predicting CMD defined by IMR_{angio} (AUC 0.99 [95% CI, 0.99– 1]), with an optimal threshold of 40 U based on ROC analysis. Moreover, Micro-IMR significantly outperformed AMR in predicting CMD (p for AUC comparison <0.01).

Patients with Micro-IMR > 40 U presented a significantly higher risk of adverse events compared with patients with Micro-IMR ≤ 40 U (log-rank P value < 0.01). This finding remained consistent across landmark analyses excluding the in-hospital and early post-discharge period (log-rank P value = 0.03). In multivariable Cox analysis, Micro-IMR resulted an independent predictor of MACE (adjusted-Hazard ratio, 3.58 [95% CI, 1.87– 6.87]; $P < 0.01$). A machine learning model incorporating Micro-IMR and traditional clinical variables (Age, Left Ventricle Ejection Fraction < 40%, Previous PCI, Incomplete ST resolution, Killip class, Final TIMI flow < 3) demonstrated good accuracy in predicting the primary endpoint at various time intervals (AUC 0.8 [95% CI, 0.73– 0.86] at 1 year and AUC 0.76 [95% CI, 0.62– 0.9] at 2 years, respectively).

Conclusions

Micro-IMR is a reliable, single-view angiographic tool for predicting CMD and long-term adverse events in STEMI patients. When integrated into an ML-based risk model, it allows for the early identification of high-risk STEMI patients, and it may guide the clinical decision-making on intensified monitoring

P27

QUANTITATIVE FLOW RATIO PREDICTS MORTALITY IN AORTIC STENOSIS PATIENTS POST-TAVR: A NOVEL INSIGHT

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Introduction

Quantitative flow ratio (QFR) is a non-invasive method to evaluate coronary artery disease (CAD). While its diagnostic accuracy in severe aortic stenosis (AS) is established using fractional-flow reserve (FFR) as a reference, its prognostic role remains unclear. This study aimed to: 1. evaluate the relationship between angiographic and QFR-defined CAD; 2. investigate QFR impact on CAD reclassification; 3. examine the association between QFR strata and six-year all-cause mortality, focusing on lesion-specific and patient-level outcomes

Methods

This retrospective study analyzed angiographic data blinded to outcomes, enrolling consecutive patients with severe AS treated with transcatheter aortic valve replacement (TAVR) at four Italian centers. None of the patients underwent pre-TAVR or concomitant coronary revascularization due to either the absence of significant coronary stenoses or clinical decisions. Angiographic characteristics and QFR were assessed using QAngio-XA 3D software (Medis). The primary endpoint was all-cause mortality at six-year follow-up.

Results

A total of 633 patients with 1,031 coronary lesions were included. QFR ≤0.80 was identified in 14.1% of lesions, while angiography-defined CAD was present in 20.2% (p=0.004). QFR reclassified CAD prevalence across coronary territories, significantly reducing RCA lesions (43.7% to 22.2%) and increasing LAD lesions (26.4% to 73.7%). At six-year follow-up, QFR ≤0.80 independently predicted mortality (HR: 2.77, 95% CI 1.76–4.35, p<0.001). Mortality was higher in QFR-positive lesions (49.2%) compared to QFR-negative lesions (20.0%). Predictors of QFR ≤0.80 included proximal LAD location (OR: 7.85, 95% CI 3.12–19.79) and lesion length (OR: 1.08 per mm, 95% CI 1.05–1.12).

Conclusions

Coronary QFR can predict mortality in patients with severe AS treated with TAVR without revascularization at long term follow up

Figure 1: CAD prevalence according to angiographic and QFR evaluations

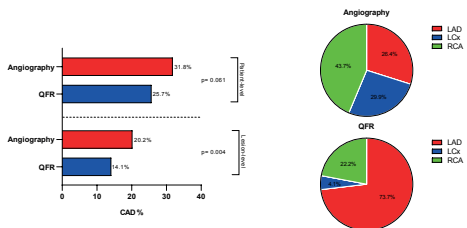


Figure 2: ordinal relationship between QFR strata and mortality

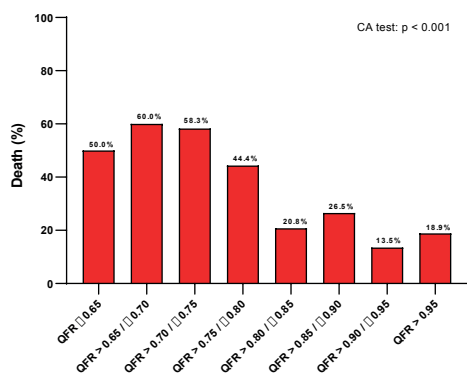


Figure 3: discrete (A) and continuous (B) relationship between QFR and mortality

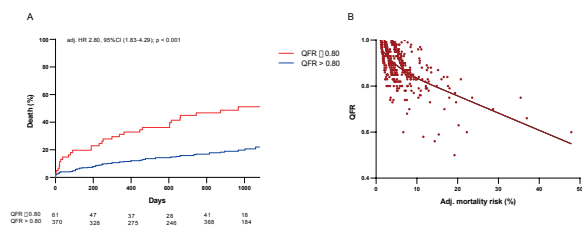


Figure 4: mortality rates according QFR-positive lesions' location

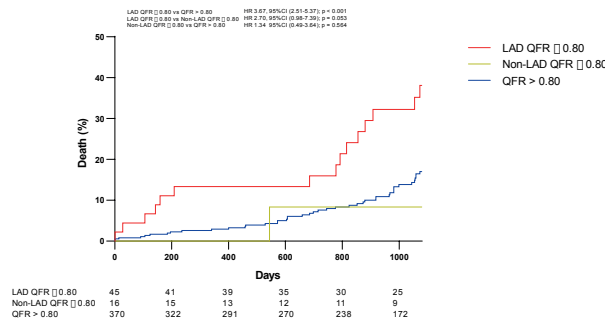
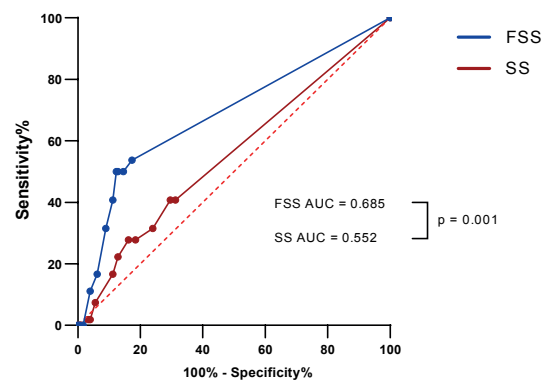


Figure 5: ROC analysis on the discriminative power for mortality of FSS and SS



P28

INTEGRATED ASSESSMENT OF CORONARY PHYSIOLOGY AND PLAQUE VULNERABILITY FOLLOWING RESORPTION OF MAGNESIUM-RESORBABLE SCAFFOLDS

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Background:

Bioresorbable scaffolds (BRS) are designed to provide temporary vascular support following percutaneous coronary intervention (PCI), with the goal of restoring normal vascular function after complete resorption. Recent clinical data have demonstrated favorable outcomes with the Magmaris Resorbable Magnesium Scaffold (RMS; Biotronik AG) in everyday clinical settings. However, the long-term effects of RMS on plaque vulnerability and coronary physiology post-resorption remain insufficiently characterized.

Methods:

This study aimed to evaluate temporal changes in angiography-derived computational metrics reflecting plaque vulnerability and coronary physiology following complete RMS resorption. Plaque vulnerability was assessed using Radial Wall Strain (RWS ≥13%), and coronary physiology was evaluated through the Murray's law-based quantitative flow ratio (μFR ≤0.80). We conducted a retrospective, in-silico, blinded analysis of a prospective, two-center cohort comprising 150 patients (158 vessels) who underwent PCI with RMS and had elective angiographic follow-up at a median of 17 months [IQR 12–23]. RWS and μFR were analyzed at three time points: pre-PCI, post-PCI, and follow-up.

Results:

At baseline, the median μ FR was 0.73 [0.59–0.83], with 109 vessels (68.9%) classified as ischemia-inducing, while median RWS was 20.7 [17.6–26.5] %, with 149 vessels (94.3%) deemed vulnerable.

Post-PCI, μ FR significantly improved to 0.95 [0.91–0.98], with only 3 vessels (1.9%) still ischemia-inducing. RWS markedly decreased to 11.5 [9.6–12.6] %, with 26 vessels (16.5%) remaining vulnerable.

At follow-up, μ FR remained high at 0.93 [0.87–0.96], showing a significant improvement from baseline (mean difference +0.21 [95% CI 0.18–0.24]; $p=0.001$), with 22 vessels (13.9%) ischemia-inducing. RWS slightly increased to 12.5 [11.1–16.2] %, but was still significantly lower than baseline (mean difference -8.7 [95% CI -10.0 to -7.49]; $p=0.001$), with 62 vessels (39.2%) classified as vulnerable.

Late functional loss was minimal (0.02 [-0.01–0.07]), with 45 vessels (28.5%) showing a decline. Notably, late functional loss showed no significant correlation with pre-PCI RWS% ($R = 0.048$; $p = 0.551$), whereas net functional gain demonstrated a significant positive correlation ($R = 0.293$; $p = 0.001$).

Conclusion:

Following complete resorption of RMS, favorable long-term outcomes were observed in both coronary physiology and plaque vulnerability. These findings support the potential of RMS to enable durable vascular restoration, particularly in lesions with vulnerable plaque characteristics. The observed reduction in plaque vulnerability over time suggests a reassuring role of RMS in promoting plaque passivation and stabilizing high-risk lesions.

PERIPHERAL: RENAL DENERVATION

P29

PATIENTS' AWARENESS AND PREFERENCE IN HYPERTENSION CARE: INSIGHTS FROM THE VERONA RENAL DENERVATION INTERVIEW (VERDI)

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Introduction

Despite advancements in antihypertensive therapy, poor disease awareness and low adherence remain major obstacles to effective blood pressure (BP) control. Renal denervation (RDN) is a promising adjunctive therapy for patients with resistant hypertension, but its role within patient-centered care is still evolving.

The VERDI study aimed to explore patient perceptions and preferences using a structured questionnaire, comparing individuals under medical therapy to those referred for RDN.

Methods

A structured, custom-designed questionnaire was administered to 150 hypertensive patients:

- DRUGS group (n = 100): receiving medical therapy only
- RDN group (n = 50): referred for renal denervation

The two groups were homogeneous in terms of age (64 years), sex, and comorbidities. The prevalence of chronic kidney disease (CKD) and previous myocardial infarction was significantly higher in the RDN group, whereas hypertensive heart disease was more common in the DRUGS group. The survey assessed disease awareness, medication burden, expectations from treatment, and self-perceived health status, using a 7-point Likert scale.

The RDN group completed the questionnaire at baseline and again six months after the procedure. Inter-group and intra-group comparisons were performed using Mann-Whitney U and chi-square tests.

Results

Despite comparable baseline blood pressure values, patients in the RDN group showed greater awareness of hypertension-related risks, higher levels of discomfort with daily medication, stronger motivation to pursue alternative treatment options

These differences likely reflect:

- A more advanced clinical profile (e.g., higher CKD prevalence)
- Pre-procedural multidisciplinary evaluation
- Dedicated counseling by cardiologists and nephrologists

Following the intervention, RDN patients reported reduced anxiety, improved health perception, and greater confidence in BP control—highlighting both the psychological and clinical benefits of the procedure and the preparatory process.

Conversely, patients in the DRUGS group showed limited awareness of RDN and a generally neutral attitude toward interventional options.

Conclusions

Our study reveals a substantial gap in disease awareness between patients treated with pharmacological therapy alone and those evaluated for renal denervation. The VERDI questionnaire effectively identified these differences, emphasizing the need for earlier, broader, and more structured educational strategies.

Patients—particularly those showing early signs of secondary hypertension-related complications—should be thoroughly informed about the nature of the disease and the full range of treatment options available, including both pharmacological and interventional approaches. Awareness of the disease is a key factor in improving adherence and achieving sustainable blood pressure control.

	RDN N=50	DRUGS N=100	p value
Male sex	32 (64.0)	69 (69.0)	0.54
Age (years)	64.0 (52.0-74.0)	64.0 (54.0-76.0)	0.41
Diabetes mellitus	15 (30.0)	33 (33.0)	0.83
Previous MI	18 (36.0)	22 (22.0)	0.04
Family history of CAD	21 (42.0)	31 (31.0)	0.18
Dyslipidaemia	33 (66.0)	69 (69.0)	0.97
Active Smokers	6 (12.0)	12 (12.0)	1.00
Former smokers	17 (34.0)	33 (33.0)	0.905
Previous stroke/TIA	6 (12.0)	8 (8.0)	0.38
Overweight (BMI>25 kg/m2)	29 (58.0)	60 (60.0)	0.81
PAD	15 (30.0)	19 (19.0)	0.09
Left ventricle hypertrophy	27 (54.0)	58 (58.0)	0.008
CKD (eGFR<60 ml/min/1.73 m2)	31 (62.0)	29 (29.0)	0.0001
Hypertensive retinopathy	4 (8.0)	7 (7.0)	0.72

STRUCTURAL HEART DISEASE: GENERAL

P30

BALLOON AORTIC VALVULOPLASTY: TRANSRADIAL APPROACH

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Introduction

Balloon aortic valvuloplasty (BAV) is one of the therapeutic strategies available for the management of severe aortic stenosis and it is traditionally performed via transfemoral access. Although the transradial approach has been proposed as an alternative, evidence supporting its use in this setting remains limited compared to the standard approach. This study aimed to assess the feasibility, efficacy, and safety of BAV performed via transradial access.

Methods

This is a retrospective, observational, single-center study that included patients with severe aortic stenosis who underwent transradial BAV.

An 8-French Brite Tip sheath (Cordis) and a 18- or 20-mm Cristal balloon catheter (Balt) were employed during the procedure. Balloon size was chosen based on the left ventricular outflow tract diameter as measured by echocardiogram.

Rapid temporary pacing was achieved through a 0.035-inch left ventricular Safari guidewire; in cases where this approach proved ineffective, a venous electrocatheter was employed as an alternative.

Results

A total of 21 patients were evaluated; 67% were female; the mean age was 86 ± 4 years; the mean body surface area was 1.7 ± 0.2 m².

Technical success was 90%, the procedure was performed through distal radial access in 12 patients. For two patients, femoral access was required due to atherosclerotic disease of upper limbs or difficulty in advancing the balloon. Pacing through the guidewire was effective in 95% of cases.

The baseline peak-to-peak gradient was 69 ± 29 mmHg and significantly reduced to 36 ± 16 mmHg after the procedure, $P < 0.001$.

There were no cases of balloon entrapment, acute compartment syndrome, procedural death or stroke. There was one case of procedural arrhythmia (a ventricular tachycardia requiring defibrillation).

Intra-hospital follow-up revealed no severe aortic regurgitation (echocardiogram was available for 18 patients). Furthermore, there was no significant (> 3 g/dL) decrease in hemoglobin or need for pacemaker implantation.

Conclusions

The transradial approach is a valid option for performing BAV, even via the distal radial artery.

P31

ABSENCE OF SECOND HEART SOUND IN ASSESSING AORTIC STENOSIS SEVERITY

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Introduction

Physical examination remains the essential initial tool for the diagnosis of aortic stenosis (AS). This study aimed to evaluate the accuracy of various physical examination parameters in assessing the severity of AS.

Methods

We prospectively enrolled consecutive patients with AS referred for echocardiographic evaluation at our centre over one-year period. Patients were classified as having severe (aortic valve area [AVA] ≤ 1 cm²) or non-severe (AVA > 1 cm²) AS based on echocardiographic findings. A cardiologist, blinded to these findings, performed a comprehensive cardiac physical examination. Subsequently, a second cardiologist, also blinded to prior data, examined the patients to assess inter-observer reliability.

Results

A total of 156 patients (mean age 77 ± 12 years, 40% women) were included, with 110 (71%) diagnosed with severe AS and 46 (29%) with non-severe AS (37 moderate and 9 mild AS). Among the physical examination parameters, the absence of the second heart sound (S2) demonstrated the highest diagnostic accuracy, with an AUC of 0.72 (95% CI: 0.61-0.83; $p < 0.001$), 63% sensitivity, and 91% specificity. Excluding the 14 patients with low-flow low-gradient AS increased the accuracy of this sign to an AUC of 0.74 (95% CI: 0.62-0.85; $p < 0.001$), with 67% sensitivity and 91% specificity. The inter-observer reliability for the absence of S2 was nearly perfect (McNemar $p = 0.94$).

Conclusions

The absence of S2 offers acceptable diagnostic accuracy for identifying severe AS, highlighting its utility in clinical practice.

STRUCTURAL HEART DISEASE: LAAO

P32

OMEGA LAA OCLUDER FOR TINY LEFT ATRIAL APPENDAGES: A EUROPEAN MULTICENTER CASE SERIES

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Introduction:

Left atrial appendage (LAA) occlusion is an interventional technique used to prevent ischemic strokes in patients with atrial fibrillation and a contraindication for oral anticoagulation. Current left atrial appendage occlusion devices do not fit all anatomical variations of the left atrial appendage. The Omega left atrial appendage occluder is a highly conformable device, which can occlude LAAs with a minimum landing zone diameter as small as 10.5 mm. Our registry aimed to determine if very small LAAs, with a landing zone < 10.5 mm, which is below the recommended size for most LAA occluders, including Omega, can be safely closed.

Methods:

This multicentre retrospective registry involved 10 patients from seven European centres between May 2023 and July 2024. All patients had atrial fibrillation with an indication for left atrial appendage occlusion and a minimum LAA diameter less than 10.5 mm. The primary endpoint was to assess the safety and efficacy of the procedure, while secondary endpoints included complete left atrial appendage closure, absence of embolization, and incidence of stroke during follow-up.

Results:

The Omega device was successfully implanted, without complications, and achieved complete left atrial appendage closure without significant peri-device leak in all patients. No events occurred within 7 days post implant. Similarly, at an average follow-up of 130 ± 69 days, there were no device embolization, thrombosis, thromboembolic events, major bleedings or deaths.

Conclusions:

The registry suggest that Omega left atrial appendage occluder may be safely and effectively utilized in patients with very small left atrial appendages, offering a viable alternative for stroke prevention in atrial fibrillation; further prospective, randomized, controlled studies are needed to confirm and support these data

P33

EFFICACIA IMMEDIATA E AL FOLLOW-UP DELLA CHIUSURA PERCUTANEA DELL'AURICOLA SINISTRA: CONFRONTO TRA DIVERSE CARATTERISTICHE ANATOMICHE E DEVICE UTILIZZATI

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Introduzione

La chiusura percutanea dell'auricola sinistra (LAA) è una tecnica interventistica per la prevenzione del rischio embolico in pazienti affetti da fibrillazione atriale e controindicazione all'anticoagulante orale. Vista l'ampia variabilità di forma dell'auricola sinistra si è reso necessario produrre diversi tipi di dispositivi con diversi principi di funzionamento. I dispositivi ad oggi disponibili per la chiusura percutanea dell'auricola sinistra sono basati su due principi: il sistema "plug" oppure il sistema "pacifier" (letteralmente "tappo" e "ciuccio"): i sistemi basati sul concetto di "plug", come ad esempio il dispositivo WATCHMAN FLX[®], sono una singola struttura che va a occludere l'auricola; i sistemi basati sul principio del "pacifier", sono costituiti da una parte chiamata "lobo" che si ancora all'interno dell'auricola e che mantiene trazionata una seconda parte chiamata "disco" per sigillare l'ostio dell'auricola (esempi di dispositivi basati su questo principio sono AMPLATZER Cardiac Plug & Amulet[®], Ultraseal[®], LAmbr[®] e Omega LAA occluder[®]). Lo scopo del presente studio è stato di valutare l'efficacia periprocedurale ed al follow-up della chiusura percutanea dell'auricola sinistra eseguita con device diversi per tipologia o di simile tipologia ma diverso costruttore/struttura. In particolare, sono stati valutati i leak paraprotetici residui al follow up in relazione alle caratteristiche basali e al tipo di dispositivo utilizzato. Ulteriore scopo è stato quello di valutare l'outcome dei pazienti al follow-up riguardo a mortalità ed eventi maggiori cardiovascolari o cerebrovascolari (MACCE - Major Adverse Cardiac and Cerebrovascular Event) che includono anche l'embolizzazione del device, il tamponamento e la morte per cause cardiovascolari o cerebrovascolari.

Metodi

Nel nostro studio abbiamo valutato in maniera retrospettiva tutti i pazienti ricoverati per chiusura percutanea di auricola sinistra presso Fondazione IRCCS "Ca' Granda" Ospedale Maggiore Policlinico di Milano, in un periodo compreso tra maggio 2021 e luglio 2024. Sono stati identificati un totale di 38 pazienti consecutivi candidati a chiusura percutanea di auricola sinistra, tutti ovviamente affetti da fibrillazione atriale. Tutti i pazienti sono stati sottoposti a un ecocardiogramma transesofageo pre-procedurale che ha permesso di definire le misure dell'auricola sinistra: la massima misura della "landing zone", il massimo diametro dell'ostio derivando poi il rapporto device/landing zone e device/ostio prendendo la dimensione nominale del device impiantato; è stata inoltre identificata la profondità minima utile, che è la profondità, a partire dall'ostio, identificata come utilizzabile per le manovre di impianto del device; tratti di auricola di dimensioni inferiori ai 5 mm, che corrispondono approssimativamente a 14 french, e cioè la dimensione dei sistemi di delivery dei vari device, sono stati considerati non utilizzabili per le manovre di impianto e quindi esclusi dalla profondità minima utile. È stata valutata la presenza di leak peridevice al termine della procedura, eseguite tutte con monitoraggio ecografico transesofageo, definendo leak di grosse dimensioni quelli maggiori di 5 mm, misura che in letteratura correla con eventi cardiovascolari a distanza. Al follow-up sono stati i MACCE, oltre all'infarto miocardico acuto, l'ictus ischemico o emorragico, la morte cardiovascolare, la rivascolarizzazione coronarica o cerebrale e l'angina instabile ma anche l'embolizzazione del device e la sua trombosi.

Risultati

Della popolazione arruolata 34 pazienti hanno eseguito un ecocardiogramma transesofageo al follow-up, permettendo di valutare la presenza o assenza di eventuali leak. La popolazione è risultata essere costituita per il 68,4% da maschi con un'età media di $71,5 \pm 9,3$ anni. Tutti i pazienti presentavano ovviamente storia di fibrillazione atriale e nello specifico il 76,3% era affetto da FA parossistica. Quasi tutti i pazienti erano in ritmo sinusale al momento della procedura e il dispositivo più utilizzato è risultato l'Amulet[®] (60,5% dei casi); il secondo più utilizzato è stato il LAmbr[®] (31,6 % dei casi). Le procedure si sono concluse con un rate di successo del 94,7% e con una bassa incidenza di complicanze (5,3%), la maggior parte costituite da complicità del sito di accesso (2,6%). Al termine della procedura sono stati evidenziati leak peridevice nel 10,8% dei casi, e nel 2,7% dei pazienti si sono riscontrati leak significativi, cioè oltre i 5mm. La quasi totalità dei pazienti è stata dimessa in terapia antiaggregante con ASA, di cui la maggior parte in duplice terapia antiaggregante (63,2% del totale). All'ecocardiogramma transesofageo di follow-up, eseguito 150 \pm 135 giorni dopo la procedura, si è rilevato un aumento significativo dei leak periprotetici totali (Leak peridevice al termine vs Leak peridevice FU: 10,8% vs 28,9%; $p < 0,05$) e dei leak di grosse dimensioni (Leak peridevice > 5 mm al termine vs Leak peridevice > 5 mm FU: 2,7% vs 5,3%; $p < 0,05$). Al follow-up clinico, esegui-

46° CONGRESSO NAZIONALE GISE

to 274 giorni dopo la procedura con un range interquartile di 318 giorni, sono stati registrati solo 3 eventi MACCE di cui due decessi. Suddividendo la popolazione totale tra i pazienti con e senza leak al follow-up si è denotato che i due sottogruppi erano assolutamente sovrapponibili per caratteristiche cliniche e procedurali, ad esclusione del device utilizzato e della profondità minima utile che risultava significativamente minore nei pazienti che avrebbero poi sviluppato leak al follow up ($26,2 \pm 8,2$ mm nei pazienti senza leak e $21,0 \pm 5,4$ mm nei pazienti con leak; $p: 0,03$). Riguardo al device utilizzato, il LAmbré® ha dimostrato un rischio relativo di sviluppare leak al follow-up 13,33 volte superiore rispetto agli altri device (IC 2,42-73,48) ed in particolare modo rispetto all'Amulet®, che aveva un rischio di sviluppare leak al follow-up del 92,5% inferiore rispetto al LAmbré®. Anche la terapia medica, sia alla dimissione che al follow-up, non differiva tra i due gruppi. L'analisi univariata per i leak al follow-up ha evidenziato come unica variabile significativa la profondità minima utile (OR: 0.90; $p: 0.04$), comprendendo nell'analisi la profondità minima utile, il rapporto Landing Zone/Device, il rapporto Ostio/Device e la presenza di ritmo sinusale all'impianto. Tale variabile manteneva la propria significatività anche all'analisi multivariata contro il rapporto Landing zone/Device (OR: 2,99; $p: 0,70$), parametro scelto in quanto all'analisi univariata era quello che mostrava maggior correlazione con i leak al follow-up rispetto alle altre variabili.

Conclusioni

Sulla base dei risultati del nostro studio, è possibile affermare che la chiusura percutanea dell'auricola sinistra è una procedura efficace, ma con un'incidenza di leak peridivice non trascurabile e variabile nel tempo. La profondità dell'auricola e il tipo di device scelto sembrerebbero influenzare lo sviluppo di leak a distanza. Ulteriori studi con ampie casistiche e follow-up prolungati sono necessari per confermare queste ipotesi.

P34

LEFT ATRIAL APPENDAGE CLOSURE IN END STAGE RENAL DISEASE PATIENTS WITHOUT THE USE OF CONTRAST DYE

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Introduction

Chronic kidney disease (CKD) is a condition that affects more than 10% of the general population worldwide, that is more prevalent in older individuals, women, racial minorities, and in people with diabetes mellitus and hypertension. Approximately 2% of people with chronic kidney disease (CKD) progress to end-stage renal disease (ESRD), leading to renal replacement therapy. In our study we compared percutaneous left atrial appendage closure (LAAc) with AMPLATZER™ Amulet™ device in patients with and without ESRD. In ESRD patients LAAc procedure need to be done without the use of contrast dye, reducing the risk of acute kidney injury (AKI), solely driven by transesophageal echocardiogram.

Methods

We compared the results of twenty-four procedures of LAAc done in our centre, whom two in patients undergoing hemodialysis treatment (serum creatinine $4,35 \pm 0,45$ ml/min) and twenty-two in non ESRD patients (serum creatinine $1,49 \pm 1,17$ ml/min).

Results

Procedural success rates were excellent in both groups (100% in ESRD patients vs 91%) without severe periprocedural complications at 1 month follow up (i.e. procedural death, myocardial infarction, cardiac tamponade or major bleeding).

LAAc without the use of contrast dye was associated with less fluoroscopy time ($12,16 \pm 4,36$ vs $18,88 \pm 8,69$) and less radiation exposure ($2047 \pm 462,9$ vs $5353,76 \pm 4707$ Gy*cm², $p < 0.01$).

Conclusions

Despite the small number of samples and the heterogeneity of the two groups, LAAc procedures guided by transesophageal echocardiogram without the use of contrast dye appears safe and feasible, showing itself as a viable alternative to the traditional procedure, especially in hemodialysis patients.

STRUCTURAL HEART DISEASE: MITRAL INTERVENTIONS

P35

TRANSCATHETER EDGE TO EDGE REPAIR FOR SYSTOLIC ANTERIOR MOTION RELATED MITRAL REGURGITATION IN PATIENTS WITH HYPERTROPHIC CARDIOMYOPATHY. THE TRANSPARENT INTERNAL REGISTRY

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Introduction

Hypertrophic cardiomyopathy (HCM) is a genetic disorder characterized by left ventricular hypertrophy, left ventricle outflow tract obstruction (LVOTO), systolic anterior motion (SAM) and subsequent regurgitation of the mitral valve. Patients at high or prohibitive surgical risk may benefit from transcatheter mitral valve edge-to-edge repair (M-TEER), although its risk/benefit profile is still unclear.

Methods

To evaluate the safety and efficacy of M-TEER in patients with obstructive HCM and severe SAM-related mitral regurgitation (MR).

This retrospective, international, multicenter study included 35 symptomatic patients with obstructive HCM and moderate-to-severe or severe SAM-related MR treated with M-TEER in 12 centers from 2018 to 2024. The Mitral Valve Academic Research Consortium (MVARC) definitions were applied. Echocardiographic and clinical outcomes were assessed at discharge, 30 days, 1 year, and last available follow-up.

Results

MR $\leq 2+$ was achieved in 97% of patients. Acute technical, 30-day device and procedural success were achieved in 94%, 91% and 88% of the cases, respectively. The LVOT gradient decreased significantly from baseline 62.0 mmHg (IQR 35.5-92.0) to post-procedure 16.0 mmHg (IQR 12.0-22.0), $p < 0.05$, and the reduction persisted at a median follow-up of 523 days. The percentage of patients in NYHA class I/II increased significantly from 31% to 86% at last available follow-up. The composite outcome occurred in 22% of the patients and it was driven by acute decompensated heart failure.

Conclusions

M-TEER is a feasible and effective treatment for symptomatic obstructive HCM patients with SAM-related MR who are at high/prohibitive surgical risk. It significantly reduces LVOTO and MR thus improving symptoms and clinical outcomes.

P36

TRANSCATHETER MITRAL VALVE-IN-VALVE AND VALVE-IN-RING PROCEDURES: A SINGLE-CENTER EXPERIENCE

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Introduction

Transcatheter mitral valve-in-valve (ViV) and valve-in-ring (ViR) procedures have emerged as viable alternatives to redo surgery in patients with degenerated mitral bio-prostheses or failed mitral valve repair. We report our single-centre experience, focusing on procedural feasibility, success rates, and early clinical outcomes.

Methods

Between December 2017 and June 2025, $n = 27$ patients underwent mitral ViV ($n = 18$) or ViR ($n = 9$) procedures at our institution. All patients were deemed high surgical risk and were evaluated by a multidisciplinary heart team. All procedures were performed via transseptal access using balloon-expandable valves. Preprocedural planning involved multimodal imaging, including trans-thoracic/trans-esophageal echocardiography and cardiac computed tomography.

Results

The mean age was 76 ± 9 years, with 59% female ($n = 16$). Thirteen patients (48%) had significant mitral regurgitation, $n = 11$ (41%) had severe mitral stenosis, and $n = 3$ (11%) had mixed valvular degeneration. No cases of paravalvular leak were identified at baseline in the previously implanted surgical devices. All mitral rings in the ViR group were complete semi-rigid devices, providing a favourable anatomical profile for transcatheter implantation.

The Edwards SAPIEN 3 prosthesis was used in $n = 19$ patients and the Myval prosthesis in $n = 8$ patients, with valve sizes ranging from 23 mm to 29 mm. Although the Myval valve does not have an official indication for mitral ViV/ViR use, it was selected in cases requiring intermediate or extra-large sizes.

Intra-procedural inotropic support was needed in three patients due to acute left ventricular afterload mismatch. One patient experienced a major vascular complication at the access site, requiring blood transfusion. Procedural success was achieved in 89% ($n = 25$) of cases.

There were two cases of emergent surgical conversion due to linear perforation of the left ventricular wall caused by guidewire manipulation; one case resulted in patient death. A second intraprocedural death occurred during a ViR procedure due to annular rupture during valve deployment. In this case, the patient had an extra-large 34 mm Physio ring, treated off-label with a 29 mm Myval prosthesis over-expanded with an additional 1 mL volume.

Mean post-procedural trans-mitral gradients significantly improved (9.27 ± 4.6 vs. 5.4 ± 1.3 mmHg, $p < 0.01$). Eight patients (30%) had paravalvular leak, with only one case classified as moderate. Left ventricular ejection fraction remained unchanged ($55 \pm 11\%$ vs. $52 \pm 12\%$, $p = 0.47$), while systolic pulmonary artery pressure was significantly reduced (53 ± 16 vs. 44 ± 13 mmHg, $p = 0.049$).

Conclusions

Our experience confirms the feasibility and efficacy of transcatheter mitral ViV and ViR procedures in carefully selected high-risk patients. The ViR procedure presents greater technical challenges compared to ViV, particularly in cases of suboptimal ring dimensions.

In patients with medium-sized surgical rings and an optimal match between true internal diameter and the selected transcatheter prosthesis, ViR can be performed safely. However, annular rupture remains a serious risk in oversized or off-label configurations requiring significant prosthesis over-expansion.

P37

CLINICAL OUTCOMES OF TRANSCATHETER EDGE-TO-EDGE REPAIR IN PATIENTS WITH FUNCTIONAL MITRAL REGURGITATION AND PULMONARY HYPERTENSION

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Introduction

Transcatheter edge-to-edge mitral valve repair (M-TEER) is an established therapeutic option for patients with functional mitral regurgitation (FMR) and heart failure with reduced ejection fraction (HFrEF) who are not candidates for surgery. Pulmonary hypertension (PH) is frequently observed in these patients and adversely impacts prognosis. However, limited data exist on the outcomes of M-TEER in patients with PH, particularly regarding hemodynamic subtypes.

Methods

This multicenter, retrospective analysis included 144 HFrEF patients with moderate-to-severe or severe FMR who underwent M-TEER between January 2013 and December 2022 across four Italian centers. Baseline hemodynamic assessment was performed using right heart catheterization (RHC) in conscious patients. Procedural outcomes and clinical follow-up were evaluated at 1 year. The endpoints studied included death from any cause, heart failure (HF) hospitalization, and a composite endpoint of both.

Results

Among the 144 patients, 84% had PH (64% combined post- and pre-capillary-PH (Cpc-PH), 20% isolated post-capillary-PH (Ipc-PH)). Procedural success was achieved in 92%, with significant improvements in New York Heart Association (NYHA) functional class and echocardiographic parameters. At 1 year, the composite endpoint occurred in 30% of patients, with higher rates in PH patients compared to no PH group (34% vs. 9% respectively, $p = 0.039$). Among PH patients, Cpc-PH patients demonstrated the worst outcomes (for the composite endpoint at 1 year Cpc-PH 37% vs Ipc-PH 24% vs no-PH 9%, $p = 0.031$). Multivariate analysis confirmed Cpc-PH as significant predictor of adverse outcomes.

Conclusions

M-TEER is an effective therapeutic option for patients with HFrEF and FMR, providing significant procedural success and clinical improvements. However, patients with PH, particularly those with Cpc-PH, exhibit worse long-term clinical outcomes.

P38

IMPIANTO TRANSCATETERE DI VALVOLA MITRALICA (TMVI) IN PAZIENTI AD ELEVATISSIMO RISCHIO CHIRURGICO: ESPERIENZA DI UN SINGOLO CENTRO

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Introduzione L'impianto transcattere di valvola mitralica (TMVI) rappresenta un'opzione terapeutica emergente per pazienti con controindicazione o rischio elevato per la chirurgia convenzionale. In particolare, nei casi di disfunzione di bioprotesi, fallimento plastica con anello o calcificazioni estese dell'anello mitralico (MAC), l'approccio transcattere sta mostrando risultati promettenti. La protesi Myval ha recentemente suscitato interesse per il suo impiego off-label anche in sede mitralica, grazie alla sua versatilità e al profilo di navigabilità favorevole. Presentiamo in questo lavoro l'esperienza del nostro centro nell'utilizzo della Myval per interventi di TMVI, con l'obiettivo di contribuire alla crescente letteratura su questa strategia terapeutica e di offrire spunti utili per la selezione dei pazienti e l'ottimizzazione della tecnica procedurale.

Metodi Da ottobre 2024 a maggio 2025 nel nostro centro sei pazienti sono stati sottoposti a procedure di TMVI. Di questi, due uomini e quattro donne con età media di $76,17 \pm 6,62$ anni. Tutti presentavano sintomi importanti di scompenso cardiaco, classificati come classe III secondo la scala NYHA. Nel 16,7% dei casi (un paziente) il difetto valvolare predominante era una severa stenosi mitralica; nel 16,7% un rigurgito severo; nel restante 66,7% un difetto combinato.

In tutti i pazienti è stata impiantata una valvola cardiaca transcattere MyVal sotto guida ecocardiografica transesofagea e fluoroscopica. Quattro interventi sono stati eseguiti come TMVI ViV (Valve-In-Valve); un intervento è stato eseguito come TMVI ViR (Valve-In-Ring); un intervento è stato eseguito come TMVI ViMAC in presenza di calcificazione avanzata dell'anello mitralico (MAC). Due interventi sono stati eseguiti tramite accesso transvenoso/transettale; tre interventi sono stati eseguiti tramite accesso transvenoso/transettale e tecnica "teleferica" da accesso chirurgico apicale; un intervento è stato eseguito tramite accesso transapicale dopo tentativo inefficace di puntura transettale e con lacerazione del LAM (lemba anteriore della valvola mitrale; tecnica Lampon).

Risultati L'intervento di TMVI è tecnicamente riuscito in tutti i casi (100% - 6/6). Il successo clinico, definito come un miglioramento funzionale di almeno una classe NYHA dopo la procedura rispetto alla situazione iniziale, è stato ottenuto in tutti i pazienti (100% - 6/6). La steno/insufficienza mitralica si è ridotta a un livello minimo o lieve nell'85% (5/6) dei nostri pazienti. Non si sono verificati ostruzioni al tratto di efflusso del ventricolo sinistro (LVOT) o persistenza di difetto interatriale significativi a livello emodinamico. Il tasso di mortalità intraospedaliero è stato del 16,7% (1/6). A 30 giorni dalla dimissione, non si sono verificati ulteriori decessi e il miglioramento clinico è rimasto stabile.

Conclusioni L'impianto transcattere di valvola mitralica (TMVI) rappresenta un'opzione terapeutica promettente per pazienti a rischio chirurgico proibitivo/alto. L'approccio transfemorale-transettale, pur essendo meno invasivo, comporta una maggiore complessità tecnica rispetto ad altre vie di accesso, soprattutto in presenza di fattori anatomici sfavorevoli. I nostri risultati preliminari mostrano che, con un'attenta selezione dei pazienti e soprattutto con una pianificazione procedurale accurata, è possibile ottenere un buon successo clinico. L'aumento dell'esperienza in questa tipologia di interventi e lo sviluppo di valvole specifiche miglioreranno ulteriormente la sicurezza e l'efficacia di questa opzione interventistica. Ulteriori studi su casistiche più ampie e un follow-up a lungo termine saranno fondamentali per consolidare il ruolo di questa tecnica nella pratica clinica.

STRUCTURAL HEART DISEASE: PFO CLOSURE

P39

15-YEAR OUTCOMES OF PFO CLOSURE IN PATIENTS WITH CRYPTOGENIC EMBOLISM: INSIGHTS FROM THE ITALIAN PROLONG REGISTRY

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Introduction

Transcatheter patent foramen ovale (PFO) closure has become the gold-standard treatment for patients with cryptogenic embolism and PFO, but long-term outcomes data are limited.

This study aimed to report the extended clinical outcomes of patients who underwent transcatheter PFO closure for cryptogenic embolism.

Methods

The PROLONG (PFO tRanscatheter Occlusion Long-term Outcomes National Group) is an investigator-initiated, multicentric, retrospective registry that enrolled patients who underwent transcatheter PFO closure between 1999 and 2013 in 12 centers in Italy. This analysis included only patients who had PFO closure for cryptogenic embolism, defined as cryptogenic ischemic stroke, transient ischemic attack (TIA), systemic embolism (SE), or silent ischemic lesions on magnetic resonance imaging. Clinical, imaging, procedural, and follow-up data were collected from electronic health records and telephone interviews.

Results

The study included 1,245 patients (mean age 47±12 years; 56% women) with a mean follow-up of 14.5±2.4 years. During follow-up, 34 patients (2.7%) experienced recurrent ischemic stroke, TIA, or SE (0.19 per 100 patient-years). Predictors of recurrent events were RoPE score ≤7 (HR: 3.44; 95%CI: 1.06-11.3; p=0.041), non-probable PASCAL classification (HR: 2.72; 95%CI: 1.17-6.34; p=0.020), and new-onset atrial fibrillation (HR: 5.19; 95%CI: 2.15-12.5; p<0.001). Serious complications were rare (0.4% in-hospital, 0.4% follow-up) and non-fatal.

Conclusions

This study confirms the long-term efficacy and safety of transcatheter PFO closure for patients with cryptogenic embolism and PFO in a real-world setting.

P40

EFFECTIVENESS OF INTRAPROCEDURAL GUIDANCE MODALITIES ON PFO CLOSURE OUTCOMES: INSIGHTS FROM THE PROLONG REGISTRY

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Introduction

Transcatheter patent foramen ovale (PFO) closure is the gold-standard treatment for patients with cryptogenic embolism and PFO. While

the current guidelines recommend the use of intraprocedural echocardiography, there is no consensus on the optimal imaging strategy. To compare the procedural and clinical outcomes of fluoroscopy-only guidance versus echocardiographic guidance—transesophageal echocardiography (TEE) or intracardiac echocardiography (ICE)—during transcatheter PFO closure.

Methods

The multicenter, retrospective PROLONG registry included 1,302 patients who underwent PFO closure between 1999 and 2013 with available data on intraprocedural guidance. Of these, 714 patients (55%) underwent TEE-guided procedures, 416 (32%) received ICE, and 172 (13%) were treated under fluoroscopy-only guidance. All patients in the fluoroscopy-only group had undergone preprocedural TEE to assess PFO anatomy.

Results

Baseline characteristics were similar across groups, including atrial septal aneurysm (34%, 33%, and 37% in the TEE, ICE, and fluoroscopy-only groups, respectively; p=0.685) and baseline severe right-to-left shunt (58%, 58%, and 49%, respectively; p=0.143). Procedural success was high across all groups (99.0% for TEE, 99.7% for ICE, and 98.2% for fluoroscopy-only; p=0.163). Echocardiographic guidance was associated with significantly shorter procedure duration (33, 28, and 48 minutes for TEE, ICE, and fluoroscopy-only; p<0.001), lower fluoroscopy time, reduced radiation exposure (11, 7.1, and 31 Gy·cm²; p<0.001), and less frequent contrast use (28%, 17%, and 94%; p<0.001). In-hospital and long-term complication rates, including new-onset atrial fibrillation, residual shunt, and recurrent embolic events, were low and comparable across groups.

Conclusions

All intraprocedural imaging strategies for PFO closure were safe and effective. However, echocardiographic guidance was associated with significant procedural advantages and may offer added value even in anatomically straightforward cases. A tailored imaging approach based on patient anatomy, operator expertise, and resource availability is recommended.

P41

LONG TERM OUTCOMES OF PATENT FORAMEN OVALE CLOSURE IN ELDERLY PATIENTS

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Introduction

Transcatheter patent foramen ovale (PFO) closure is an established treatment for patients with PFO and cryptogenic embolism. However, main randomized trials investigating PFO closure for secondary stroke prevention excluded patients older than 60 years. As a result, limited evidence is available for population. This study aimed to investigate the clinical characteristics and long-term outcomes of elderly patients undergoing transcatheter PFO closure.

Methods

This retrospective multicenter registry included patients who underwent transcatheter PFO closure between 1999 and 2013 at 13 high-volume Centers, ensuring a minimum of 10 years of follow-up. Patients receiving closure for secondary prevention of cryptogenic embolism were identified and stratified by age (<60 vs. ≥60 years).

Results

Among 1,245 included patients, 216 (17.3%) were aged ≥60 years. Elderly patients exhibited higher rates of cardiovascular risk factors and a lower Risk of Paradoxical Embolism (RoPE) score (3.9±1.0 vs. 6.7±1.4, p<0.001). In contrast, a history of migraine was more common in younger patients (33.7% vs. 21.8%, p<0.001).

Procedural success rates were high and comparable across age groups (98.6% vs. 99.2%, p=0.39). Rates of in-hospital atrial fibrillation (2.8% vs. 2.0%, p=0.50) and significant residual shunt at discharge (1.3% vs. 1.7%, p=0.75) were similarly low in both groups.

At a median follow-up of 14.5 ± 2.4 years, the incidence of the composite endpoint (stroke, transient ischemic attack, and systemic embolism) was low among elderly patients (0.28 per 100 patient-years, 95% CI 0.12–0.55) and did not differ significantly from younger patients (IRR

1.58, 95% CI 0.75–3.50, $p=0.25$). However, older patients exhibited a higher incidence of new-onset atrial fibrillation (0.83 vs. 0.20 per 100 patient-years, IRR 4.10, 95% CI 2.37–7.01, $p<0.001$) and bleeding events (0.30 vs. 0.06 per 100 patient-years, IRR 5.28, 95% CI 1.53–18.25, $p=0.01$).

Conclusions

In this large multicenter registry with extended follow-up, transcatheter PFO closure in older patients was safe and comparably effective to younger counterparts. Prospective data are warranted to confirm these observations and guide optimal management in this cohort.

P42

SEX DIFFERENCES IN CLINICAL CHARACTERISTICS AND OUTCOMES AFTER TRANSCATHETER PATENT FORAMEN OVALE CLOSURE

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Introduction

Although transcatheter patent foramen ovale (PFO) closure is a well-established intervention for secondary prevention of cryptogenic embolism, whether outcomes differ by sex remains underexplored.

Methods

We aimed to evaluate sex-based disparities in baseline characteristics, procedural outcomes, and long-term events in patients undergoing transcatheter PFO closure.

Results

From 1999 to 2013, a total of 1,245 patients (694 female [55.7%] and 551 male [44.3%]) at 13 Centers underwent PFO closure for secondary prevention of cryptogenic stroke or systemic embolism. Male patients were older (49 ± 12 vs. 46 ± 13 years, $p=0.002$), whereas female patients had higher RoPE scores (6.4 ± 1.7 vs. 6.0 ± 1.7 , $p<0.001$) and a greater prevalence of migraine at baseline (38% vs. 23%, $p<0.001$). Procedural success was high and comparable in both groups (99.0% vs. 99.3%, $p=0.82$). In-hospital complications were similarly low (2.4% vs. 3.4%, $p=0.63$).

At a median follow-up of 14.5 ± 2.4 years, the incidence of the composite endpoint (ischemic stroke, transient ischemic attack, or systemic embolism) was not significantly different between female and male patients (0.21 vs. 0.17 per 100 patient-years, IRR 1.29, 95% CI 0.64–2.57, $p=0.48$).

Conclusions

In this large multicenter registry, sex did not significantly influence long-term safety and efficacy outcomes following transcatheter PFO closure for secondary prevention of cryptogenic embolism. Further prospective studies are warranted to confirm these observations and optimize patient management based on sex-specific risk profiles

STRUCTURAL HEART DISEASE: PHARMACOLOGY

P43

PLASMA LEVELS MEASUREMENT OF THE FOUR DIRECT ORAL ANTICOAGULANTS IN PATIENTS WITH ATRIAL FIBRILLATION AT THE TIME OF ACUTE THROMBOEMBOLIC AND BLEEDING EVENTS

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Introduction

Direct oral anticoagulants (DOACs) are standard therapy to prevent thromboembolic events in non-valvular atrial fibrillation (NVAF) and are generally used without routine monitoring of plasma anti-Xa or anti-IIa levels.

Objective

To assess whether plasma levels of anti-Xa or anti-IIa at the time of presentation are associated with acute thromboembolic or bleeding events in DOAC-treated NVAF patients.

Methods

This prospective case-control study included consecutive long-term DOAC-treated NVAF patients presenting to a European emergency department with acute thromboembolic or bleeding events (cases), or for other medical reasons (controls). DOAC plasma levels were measured using drug-specific chromogenic anti-Xa assays (rivaroxaban, apixaban, edoxaban) or diluted thrombin time (dabigatran), categorized into quartiles, and analyzed according to event type.

Results

Among 1,794 patients (mean age 82 years, 49% female), 8% had thromboembolic events, 15% bleeding events, and 77% other presentations. DOAC treatment included apixaban (45%), dabigatran (17%), rivaroxaban (17%), and edoxaban (21%). Thromboembolic events were more common in patients with DOAC plasma levels in the first quartile (Q1: 50% vs. 26%; $p<0.001$), while bleeding events were more common in the fourth quartile (Q4: 46% vs. 23%; $p<0.001$). Q1 levels were associated with increased odds of thromboembolic events (OR 2.04, 95% CI: 1.36–3.08), and Q4 levels with bleeding events (OR 2.05, 95% CI: 1.49–2.82).

Conclusions

DOAC plasma levels show substantial interindividual variability and are associated with acute thromboembolic and bleeding events. These observations may help generate hypotheses for future prospective studies aimed at better defining the role of DOAC plasma monitoring in clinical practice.

STRUCTURAL HEART DISEASE: TAVI

P44

ASSOCIATION OF CRP-INDEPENDENT INFLAMMATORY INDICES WITH SEVERE SYMPTOMATIC AORTIC STENOSIS IN PATIENTS UNDERGOING TAVR

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Introduction

Transcatheter aortic valve replacement (TAVR) is a well-established treatment for severe aortic stenosis (AS), with expanding clinical indications. However, the relationship between AS severity and inflammatory or metabolic pathways remains poorly understood and underexplored. This study aims to investigate the association between CRP-independent inflammatory and metabolic indices—specifically the neutrophil-to-lymphocyte ratio (NLR), the triglyceride-glucose (TyG) index, and the systemic immune-inflammation index (SII)—and the severity of AS in patients undergoing TAVR.

Methods

We conducted a single-centre, observational study enrolling consecutive patients with severe symptomatic AS who underwent TAVR at our institution in 2024. Multivariate linear correlation and multivariate linear regression analyses, including interaction terms, were performed to assess the relationship between the aforementioned indices and the mean transvalvular gradient (MG), used as a surrogate of AS severity.

Results

Among 117 TAVR procedures performed, 40 patients with complete laboratory and echocardiographic data were included in the final analysis. The mean age was 81 ± 5 years; 23 were male and 9 had diabetes mellitus. The average MG was 47 ± 11 mmHg. Inflammatory/metabolic indices were as follows: NLR 3.06 ± 1.9 , TyG index 7.96 ± 1.44 , and SII 630.47 ± 456.74 . MG was negatively correlated with hypertension (-0.32 , $p=0.007$), and positively correlated with both SII (0.46 , $p<0.001$) and TyG index (0.63 , $p<0.001$). In multivariate analysis, both SII and TyG index were independently associated with MG ($p=0.039$ and 0.004 , respectively), with no significant interaction with sex, diabetes, or age.

Conclusions

These findings support a potential role of immuno-inflammatory and metabolic pathways in the pathophysiology and severity of aortic stenosis. The associations observed were consistent across clinical subgroups and aligned with existing literature, despite the sample size and observational design. Both SII and TyG index appear to be independent markers of AS severity. Further research is warranted to confirm these findings and to explore their prognostic implications.

P45

FEASIBILITY AND SAFETY OF A 100% TRANSFEMORAL APPROACH FOR TRANSCATHETER AORTIC VALVE IMPLANTATION - A 4-YEAR EXPERIENCE

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Introduction

In patients with peripheral arterial disease (PAD) transcatheter aortic valve implantation (TAVI) is more often performed through alternative access routes rather than the standard transfemoral (TF) access. We investigated feasibility and safety of a strategy of systematic ilio-femoral axis pre-treatment (facilitated TF-TAVI) in all consecutive patients with severe PAD undergoing TAVI at our center.

Methods

Starting in December 2020 a strategy of 100% transfemoral approach has been applied to all consecutive TAVI patients undergoing TAVI at our Institution. We analyzed procedural and clinical outcomes of all patients treated in a 4-year time window according to VARC-3 definitions, with a specific focus on outcomes in the facilitated TF-TAVI (f-TAVI) group as compared to standard TF-TAVI (s-TAVI). Additionally, a 2:1 propensity score matching (PSM) was performed to account for baseline differences. The Kaplan-Meier method was used to estimate 1-year mortality rates between groups and compared with log-rank test. Multivariable Cox proportional hazards method was used to identify independent predictors of 1-year mortality.

Results

From December 2020 to December 2024, 1269 TAVIs for severe AS were performed at our institution, 1267 (99.8%) through TF access. In 2 cases (0.2%) TF access was not attempted and TAVI was performed via alternative route for reasons other than obstructive ilio-femoral PAD. Overall, 90 patients (7.1%) underwent f-TAVI: 53.3% (n=48) with percutaneous angioplasty (PTA) only, 41.1% (n=37) PTA with intravascular lithotripsy (IVL) and 5.6% (n=5) with "paving and cracking" technique. In the f-TAVI group the access was percutaneous with suture-mediated closure technique in 87 patients (96.7%), whereas three patients (3.3%) had upfront femoral cutdown. In the f-TAVI group, the lesion treated was most commonly located at the distal common iliac artery (CIA) and external iliac artery (EIA) transition level - 43.2% (n=38), followed by proximal CIA - 40.9% (n=36) and distal EIA/proximal common femoral artery 5.7% (n=5). 10.2% (n=9) of patients had multiple stenoses. 100% of attempted TF-TAVIs resulted in successful valve delivery, 2 patients in the f-TAVI group (2.2%) needed iliac stenting after PTA for dissection. As compared to the s-TAVI group, the f-TAVI patients were younger (81.7 vs 83.3, p=0.03) but showed worse baseline clinical characteristics (diabetes 38.9% vs 28.3%, p=0.03, prior myocardial infarction 26.7% vs. 17.8%, p=0.04, lung disease 37.4 vs 20.0%, p<0.001, mean creatinine 1.4 vs 1.2 mg/dL, p=0.03) and higher surgical risk (STS score 6.0 vs 5.2%, p=0.015). There were no significant differences between f-TAVI and s-TAVI in rates of technical (97.8 vs 97.0%, p=0.68) and device success (90.0 vs. 91.3%, p=0.69), the incidence of major vascular complications (1.1 vs. 1.3 %, p=0.89), major bleeding (4.4 vs 2.2%, p=0.19) and major cardiac structural complications (1.11 vs 1.10%, p=0.995) in the whole population and after PSM (Table 1). Although f-TAVI patients as compared to s-TAVI showed higher 30-day (4.4 vs 0.9%, p=0.002) and 1-year mortality (17.7 vs 10.1%, p=0.037), the difference was no longer significant after PSM (4.4 vs 1.7%, p=0.19 and 17.7 vs 13.9%, p=0.39, respectively) (Figure 1). Facilitated TF-TAVI was not independently associated with 1-year mortality [hazard ratio (HR) 1.25, confidence interval (CI) 0.71–2.20, p=0.44]. The independent predictors of 1-year mortality were: atrial fibrillation (HR 1.63, CI 1.15–2.32, p=0.006), lung disease (HR 1.48, HR 1.01–2.19, p=0.046), elevated serum creatinine (HR 1.46, CI 1.25–1.69, p<0.001), low serum haemoglobin (HR 1.20, CI 1.08–1.34, p=0.001), low left ventricular ejection fraction (HR 1.02, CI 1.01–1.03, p=0.003), severe mitral regurgitation (HR 2.53, CI 1.22–5.28, p=0.013) and post-procedural stroke HR 5.11, CI 1.86–14.03, p=0.002).

Conclusions

A 100% TF-TAVI strategy is feasible adopting systematic pre-procedural treatment of the ilio-femoral axis and it is associated with procedural results comparable to standard TF-TAVI. However, higher mortality during follow-up observed in the facilitated TF-TAVI group, appears related to the inherent higher risk associated with severe PAD and other comorbidities, rather than the procedure itself. In this patient population, the best approach for TAVI remains unsettled.

Table 1. Major procedural outcomes at 30 days between the study groups.

	All patients (n=1267)	Unmatched population			PSM population		
		s-TAVI (n=1177)	f-TAVI (n=90)	p-value	s-TAVI (N=180)	f-TAVI (n=90)	p-value
Technical success	97.1 (1230)	97.0 (1142)	97.8 (88)	0.683	96.1(173)	97.8 (88)	0.478
Device success	91.2 (1155)	91.3 (1074)	90.0 (81)	0.688	87.8 (158)	90.0 (81)	0.590
30-day all-cause mortality	1.1 (14)	0.9 (10)	4.4 (4)	0.002	1.7 (3)	4.4 (4)	0.193
30-day cardiovascular mortality	1.0 (12)	0.8 (9)	3.3 (3)	0.027	1.7 (3)	3.3 (3)	0.390
Stroke	0.8 (10)	0.8 (9)	1.1 (1)	0.722	0.6 (1)	1.1 (1)	0.623
Myocardial infarction	0.4 (5)	0.4 (5)	0	0.536	1.7 (3)	0	0.218
Major vascular complications	1.3 (16)	1.3 (15)	1.1 (1)	0.894	2.8 (5)	1.1 (1)	0.398
Need for vascular surgery	0.6 (7)	0.6 (7)	0	0.463	2.2 (4)	0	0.154
≥VARC-3 type 2 bleeding	2.4 (30)	2.2 (26)	4.4 (4)	0.188	2.8 (5)	4.4 (4)	0.476
Major cardiac structural complications	1.1 (14)	1.1 (13)	1.1 (1)	0.995	0.6 (1)	1.1 (1)	0.623
PPM implantation	7.9 (100)	8.2 (96)	4 (4.4)	0.216	6.1 (11)	4 (4.4)	0.575

Data presented as % (n)
s-TAVI – standard TF-TAVI, f-TAVI – facilitated TF-TAVI
PSM – propensity score matched, VARC - Valve Academic Research Consortium, PPM – permanent pacemaker



Figure 1. Kaplan-Meier 1-year survival curves stratified by the study groups.
A – whole population, **B** - PSM population
PSM – propensity score matched

P46

IMPACT OF LVOT CALCIFICATION ON EARLY OUTCOME IN PATIENT WITH BICUSPID AORTIC VALVE UNDERGOING TAVI WITH SELF-EXPANDABLE AND BALLOON EXPANDABLE VALVE

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Introduction

LVOT calcification is known to be associated with adverse outcomes after TAVI in patient with tricuspid anatomy. However, its impact on

patients with bicuspid anatomy remains less explored. Additionally, the differential effect of LVOT calcification on outcomes with BE vs. SE prostheses remains unclear.

The aim of this study was to assess the impact of left ventricular outflow (LVOT) calcification on early device outcomes in a contemporary patient cohort with bicuspid aortic valve undergoing transcatheter aortic valve implantation (TAVI), and to compare outcomes between balloon-expandable (BE) and self-expandable (SE) prostheses in this population

Methods

Pre-TAVI multi-slice computed tomography (MSCT) scans from 198 BAV patients were analyzed to assess the presence and quantification of LVOT calcification. The cohort was divided into LVOT+ (calcium volume >10 mm³) and LVOT- groups. The amount of LVOT calcification was measured quantitatively from contrast-enhanced CT, using 3mensio Structural Heart software (Pie Medical Imaging). Outcomes were further stratified by valve type (SE vs. BE). The impact of LVOT calcification on 30-day VARC-3 device success, mean trans-prosthetic gradient, and peri-valvular regurgitation (PVR) was assessed using univariate and multivariate regression analysis.

Results

LVOT calcification was present in 48.2% of patients. Device success at 30 days was significantly lower in the LVOT+ group (75.8% vs. 90.1%; p=0.007). In subgroup analysis, BE valves showed higher mean trans-prosthetic gradients in LVOT+ patients (12.1±6.3 mmHg) compared to SE valves (10.2±5.8 mmHg, p=0.04). Moderate or greater PVR was more common in SE valves (17.5% vs. 10.2%; p=0.03), especially in LVOT+ patients. On multivariate analysis, LVOT calcification remained an independent predictor of reduced device success (OR 0.237; p=0.005).

Conclusions

LVOT calcification is highly prevalent in BAV patients undergoing TAVI and it is associated with reduced device success at 30 days. The impact of LVOT calcification differs between valve types, with BE valves exhibiting higher gradients and SE valves showing higher rates of PVR. These findings suggest that LVOT calcium burden should be carefully considered when selecting the type of transcatheter valve.

P47

ANATOMICAL PREDICTORS OF PERMANENT PACEMAKER IMPLANTATION AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION WITH NEW-GENERATION SELF-EXPANDABLE AND BALLOON-EXPANDABLE VALVES

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Anatomical Predictors Of Permanent Pacemaker Implantation After Transcatheter Aortic Valve Implantation With New-Generation Self-Expandable And Balloon-Expandable Valves

Introduction. Conduction disturbances (CDs) necessitating permanent pacemaker implantation (PPI) are a common complication following transcatheter aortic valve implantation (TAVI). Despite the progress in transcatheter heart valve (THV) technology, the anatomical factors contributing to CDs are not yet completely understood. This study aims to evaluate anatomical and procedural predictors of PPI following implantation of new-generation balloon-expandable (BEV) and self-expanding (SEV) THVs.

Methods. At a single center, consecutive patients with tricuspid aortic stenosis and without previous PPI who underwent multi-slice computed tomography (MSCT) followed by TAVI with new-generation THVs were prospectively collected. Anatomical parameters from MSCT (e.g. annulus eccentricity, peri-valvular calcification distribution and membranous septum length) were integrated with clinical features (including ECG abnormalities) and TAVI procedural variables (e.g. valve type, implantation depth [ID]). Independent predictors of 30-day PPI were identified using multivariable logistic regression analyses.

Results. A total of 749 patients (mean age: 81 year, mean Society of Thoracic Surgeons predicted risk of mortality: 3.9%) undergoing TAVI with BEV (n=251) or SEV (n=458) were enrolled. At 30 days, PPI was required in 151 patients (20.2%), with significant higher rate in SEV (23.7%) compared to BEV (13.1%). The groups of patients receiving BEV and SEV had significant differences in pre-TAVI clinical and anatomical features. At multivariable analysis, pre-TAVI right bundle branch block (OR: 3.292; 95% CI: 1.326–8.171; p=0.010) and ID exceeding membranous septum length (OR: 1.739; 95% CI: 1.027–2.944; p=0.039) were independent predictors of PPI. Notably, annular eccentricity ≥25% (OR: 16.470; 95% CI: 3.037–89.307; p=0.001) and significant calcification at the right coronary cusp (OR: 15.864; 95% CI: 2.156–116.706; p=0.007) were associated with increased PPI risk in BEV group but not in SEV.

Conclusions. In the present real-world population of patients undergoing TAVI, right bundle branch block and ID exceeding membranous septum length predicted PPI. Anatomical features significantly impact PPI risk in BEV, but not in SEV, recipients. Personalized procedural planning incorporating comprehensive anatomical assessment may help reducing PPI incidence.

P48

PERCUTANEOUS TRANSAXILLARY TAVI: A SINGLE CENTER EXPERIENCE

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Percutaneous Transaxillary TAVI: a single center experience

Background:

Transaxillary access for transcatheter aortic valve implantation (TAVI) is a valuable alternative in patients with unsuitable femoral access. However, data on predictors of procedural success and complications remain limited. Furthermore, conflicting evidence are currently available about the best possible option in transaxillary access: surgical cutdown vs percutaneous approach. We present outcomes from a single-center registry evaluating procedural performance and clinical results in patients undergoing transaxillary TAVI with percutaneous access.

Methods:

Thirty-two consecutive patients undergoing transaxillary TAVI over a six-year period were retrospectively analysed. In all the patients the axillary artery was punctured under echographic guidance and two ProGlide were pre-implanted.

A structured database included 79 clinical, anatomical, and procedural variables. Descriptive statistics were calculated for all variables. Numerical data were reported as medians (IQR), and categorical data as frequencies (%). Univariate analysis (Wilcoxon and Fisher's exact tests) was conducted to assess associations with the primary outcome: technical success, as defined by VARC-3 criteria.

Results:

Baseline characteristics: Mean age was 81.6 years (range 67–87), with 66.7% male. Mean BMI was 25.1 kg/m². Common comorbidities included hypertension (87.5%), coronary artery disease (56.3%), diabetes (71.9%), COPD (37.5%) and 75.0% were current or former smokers. Mean serum creatinine was 1.44 mg/dL and 59.3% had CKD.

Anatomical and procedural data: Mean axillary artery diameter was 6.3 mm. Significant calcifications of axillary artery (>50% circumferential) were present in 6.3%, and no cases of stenosis >50% were reported. Left axillary access was used in 96.9%. Self-expanding valves were used in 90.6% of patients, with the most frequent device being CoreValve Evolut (46.9%) and 29 mm the most common size. All closures were performed using two ProGlide devices. Median length of stay was 10 days.

Clinical outcomes: Technical success was achieved in 93.8% of cases. There were no conversions to surgery or emergency vascular repairs. There were 3 strokes (9.4%, all non-disabling, ischemic): of note, these events occurred at the beginning of our experience (first ten cases), suggesting a possible relationship with learning curve. The need for new permanent pacemaker implantation was 9.4%. One patient (3.1%) developed acute kidney injury (Stage 1 according to VARC criteria). Blood transfusion was required in 18.8% of cases; all bleeding events were minor (VARC-3 type 1). There were no major vascular complications. Effective haemostasis was reached with ProGlide in 29 patients (93.5%). In one patient access bleeding resolved after prolonged balloon inflation. In the remaining two patients, a covered stent implantation was needed at the vascular access because of closure device failure, resulting in minor vascular complications. There were no in-hospital deaths.

No anatomical or procedural variable was significantly associated with technical failure, stroke, paravalvular leak, or pacemaker requirement. Access dimensions (artery size, introducer size) were not associated with vascular complications. Length of stay showed a modest, non-significant correlation with transfusion (r = 0.27, p = 0.14) and AKI (r = 0.20, p = 0.28), but not with vascular complications (r = -0.09, p = 0.63) or paravalvular leak (r = 0.05, p = 0.80).

Conclusions:

Transaxillary TAVI demonstrated a high rate of technical success and a low rate of complications in this single-center experience. No individual anatomical or procedural variable significantly predicted adverse outcomes, highlighting the importance of standardized technique and operator experience. Further multicenter studies are warranted to confirm these findings and support optimal patient selection and procedural planning.

P49

EVALUATING THE ROLE OF BALLOON AORTIC VALVULOPLASTY IN COMBINED PERCUTANEOUS CORONARY INTERVENTION AND TRANSCATHETER AORTIC VALVE REPLACEMENT PROCEDURES: A SINGLE-CENTER EXPERIENCE

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Introduction Aortic stenosis (AS) and chronic coronary syndromes (CCS) often coexist, with CCS found in approximately 50% of patients undergoing transcatheter aortic valve replacement (TAVR). However, no general consensus exists regarding the timing and appropriateness of percutaneous coronary intervention (PCI) for patients scheduled for TAVR. Pre-TAVR PCI offers important advantages, such as easier access to coronary arteries and reduced myocardial ischemia during pacing and valve implantation. In this context, balloon aortic valvuloplasty (BAV) performed during PCI or TAVR may mitigate the hemodynamic burden of severe AS.

Methods We reviewed data from patients who underwent PCI prior to TAVR, distinguishing between those treated with BAV and PCI before or during the same TAVR procedure. We compared clinical and echocardiographic parameters, coronary disease burden, procedural details and in-hospital outcomes following the TAVR procedure (e.g. mortality, stroke, cardiogenic shock, acute myocardial infarction, residual aortic insufficiency, conduction disturbances and pacemaker implantation, vascular complications, bleeding and acute kidney injury).

Results Among 491 patients treated with TAVR between December 2018 and April 2025 at our academic referral center, 165 (33.6%) had documented coronary artery disease. Of these, 99 (20%) underwent pre-TAVR PCI. Specifically, 76 patients (15%) received PCI during a hospitalization prior to the TAVR procedure, including 14 with BAV (group 1). Additionally, 23 patients (4.7%) underwent PCI during the same TAVR procedure, divided into 13 with BAV (group 2) and 10 without (group 3). Patients treated with BAV+PCI before TAVR exhibited a higher STS score for morbidity and mortality ($p=0.028$) and a higher, though not statistically significant, SYNTAX score (18 ± 16 in group 1 vs. 15 ± 11 in group 2 vs. 11 ± 10 in group 3, $p=0.101$), indicating greater frailty and coronary complexity that may have prompted physicians to perform preliminary BAV and PCI to stabilize hemodynamics before the TAVR procedure.

Moreover, patients receiving BAV + PCI before TAVR, either in a two-step or a single procedure, showed higher transvalvular aortic mean gradients ($p=0.010$), suggesting that the AS severity likely influenced the decision to perform BAV prior to valve implantation to optimize procedural outcomes. Combined procedures also required longer duration ($p=0.013$) and more radiocontrast infusion ($p=0.009$), although this did not result in a higher incidence of acute kidney injury (AKI) events ($p=0.478$).

No statistically significant differences were observed among the three groups regarding in-hospital outcomes. However, a higher incidence of major bleeding was noted in patients treated with BAV+PCI in a prior hospitalization, although not during the same procedure (35.7% vs. 15.3% vs. 10%, $p=0.255$), potentially due to the ongoing dual antiplatelet therapy during TAVR.

Conclusions The lack of definitive consensus on the timing and appropriateness of PCI in patients with severe AS places the responsibility on individual centers to carefully assess individual characteristics to determine the optimal intervention strategy. BAV prior or in the same setting of TAVR could be an option in particularly severe AS with complex coronary disease.

P50

INFLAMMATION-DRIVEN ACUTE DIASTOLIC RESPONSE AFTER TAVI: THE ROLE OF THE TYG INDEX

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Introduction

Transcatheter aortic valve replacement (TAVR), first performed successfully in 2002, is now an established therapy for severe aortic stenosis, with continuously expanding indications. As patient selection broadens, there is an increasing need to identify predictive parameters that can help stratify post-procedural prognosis. The aim of this study is to evaluate the acute changes in key echocardiographic parameters — namely left ventricular ejection fraction (LVEF), TAPSE/PASP ratio, and E/e' — following TAVR, and to investigate their relationship with inflammation and metabolism-related indices, including the systemic immune-inflammation index (SII), neutrophil-to-lymphocyte ratio (NLR), and triglyceride-glucose (TyG) index.

Methods

We conducted a single-center, observational study enrolling consecutive patients with severe symptomatic aortic stenosis who underwent TAVR in 2024. Echocardiographic measurements were taken before TAVR and before hospital discharge. Inflammatory and metabolic indices were stratified by tertiles. ANOVA with post-hoc Bonferroni correction was applied to evaluate differences in echocardiographic changes across index tertiles.

Results

Of the 117 TAVR procedures performed, 36 patients had complete echocardiographic and laboratory data and were included in the final analysis.

We observed a significant difference in the change of E/e' across TyG index tertiles ($p = 0.0018$), with the lowest tertile [i.e., patients with lower TyG values] showing a greater post-TAVR increase in E/e'. No significant association was found between E/e' variation and SII ($p = 0.5954$) or NLR ($p = 0.4406$). Additionally, no significant relationship was observed between changes in LVEF or TAPSE/PASP and any of the tested indices (SII, NLR, TyG; all $p > 0.3$). Post-hoc analysis confirmed a significant difference in E/e' variation between the first TyG tertile and both the second and third tertiles, while no significant difference was observed between the second and third tertiles.

Conclusions

Our findings suggest that patients with lower metabolic risk profiles, as reflected by a low TyG index, exhibit a more favorable acute diastolic response (as indicated by E/e' improvement) following TAVR. This supports a potential role for the TyG index in predicting early hemodynamic recovery post-intervention. Further studies are warranted to confirm these results and explore their prognostic implications.

P51

PRELIMINARY OUTCOME OF TRANSCATHETER AORTIC VALVE IMPLANTATION AT CENTERS WITHOUT ON-SITE CARDIAC SURGERY

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Introduction

In many countries, patients' access to transcatheter aortic valve implantation (TAVI) is limited by reimbursement issues or delayed admission to heart valve centers (HVC), thus increasing the risk of adverse events. Possible solutions are the increase of HVC capacity, the implementation of in-situ operations on patients transported from other hospitals, and execution of procedures in centers without on-site cardiac surgery (CS).

Methods

The TAVI AT HOME (TAH) is single-arm, multicenter, investigator-driven study aiming to evaluate the safety and efficacy of transfemoral TAVI performed at centers without on-site CS by expert operators. The primary endpoint is 30-day all-cause mortality. This study focuses on the run-in phase of the registry, which was required by the ethics committee to perform an interim safety analysis. We reported the outcome of 20 TAH patients enrolled at three Italian centers from May 2023 to May 2024, compared to 41 TAVI cases included in the permanent local registry, matching the TAH inclusion/exclusion criteria, who had undergone prosthesis implantation by the same team at a HVC from January 2021 to May 2023.

Results

The two groups had similar baseline characteristics. Significantly more patients in the TAH group were deemed at prohibitive risk (85.0% vs. 56.1%; $p=0.026$) but had similar surgical risk scores. A self-expanding device was used in most cases (60.7%). Technical success did not differ between groups (95.0% in the TAH vs. 85.4%, $p=0.409$). No deaths at 30 days (primary endpoint) were observed. The 1-year survival rate did not differ between groups.

Conclusions

No early deaths were found among patients enrolled in the TAH run-in phase, likewise a population with similar characteristics who underwent TAVI at a HVC by the same expert operators. Accordingly, the ethic committee authorized the completion of the TAH enrollment and extension to other centers.

STRUCTURAL HEART DISEASE: TRICUSPID INTERVENTIONS

P52

HEART VALVE CENTER APPROACH TO SEVERE TRICUSPID REGURGITATION: REAL-WORLD DATA AND OUTCOMES

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Introduction

Severe tricuspid regurgitation (TR) is associated with significant morbidity and mortality but remains markedly undertreated. Optimal management strategies and the timing of intervention are still unclear. To describe the clinical characteristics and outcomes of patients with severe TR managed at our heart valve center (HVC) with different treatment strategies, including conservative management, surgery, and transcatheter repair (T-TEER).

Methods

We retrospectively analyzed 476 patients with symptomatic severe TR treated at our heart valve center between 2018 and 2023. Patients were categorized into three groups: conservative management (n=323), surgery (n=76), and T-TEER (n=77). Risk stratification was performed using the TRI-SCORE, classifying patients into low-intermediate (<6) and high (≥6) risk categories. The primary endpoint was a composite of all-cause mortality and heart failure hospitalization.

Results

Over 1.6±0.6 years follow-up, the primary endpoint occurred in 35.8% of patients in the conservative group, 19.7% in the surgical group, and 18.2% in the T-TEER group. Both surgery (HR: 0.49, 95%CI: 0.28–0.84, p=0.01) and T-TEER (HR 0.50, 95%CI: 0.29–0.88, p=0.02) were associated with a significantly lower incidence of the primary endpoint compared to conservative management. In low-intermediate risk patients, invasive treatments (surgery or T-TEER) significantly reduced the primary endpoint, whereas no significant benefit was observed in high-risk patients. Multivariable regression analysis identified high TRI-SCORE (aHR: 2.32, 95%CI: 1.66–3.26, p=0.03) and conservative management (aHR: 2.66, 95%CI: 1.70–4.16, p<0.01) as the only predictors of the primary endpoint.

Conclusions

In patients with symptomatic severe TR managed through a modern HVC approach, invasive treatments (TV surgery or T-TEER) provide a prognostic benefit over conservative management, particularly in early disease stages (TRI-SCORE <6).

P53**VALIDATION AND COMPARISON OF PROGNOSTIC SCORES FOR SEVERE TRICUSPID REGURGITATION**

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Introduction

Severe tricuspid regurgitation (TR) is associated with poor prognosis and significant clinical challenges. Several prognostic risk scores have been developed for this patient population, but they have been poorly externally validated, and their comparative performance remains largely unexplored.

This study aimed to validate and compare the performance of established prognostic risk scores in a real-world cohort of patients with severe TR.

Methods

We retrospectively analyzed 476 patients with severe TR treated at our institution between 2018 and 2023. Patients were categorized into three groups based on their treatment strategy: conservative management (n=323), tricuspid valve surgery (n=76), and transcatheter tricuspid edge-to-edge repair (n=77). We evaluated five prognostic risk scores (TRI-SCORE, Wang score, TRIVALVE, Hochstadt score, and TRIO score) using area under the curve (AUC) analyses for all-cause mortality and the composite endpoint (all-cause mortality or heart failure hospitalization) at two years of follow-up.

Results

Among the evaluated scores, the TRI-SCORE consistently demonstrated the highest accuracy across all treatment strategies and endpoints. In the overall cohort, the TRI-SCORE achieved an AUC of 0.71 (95% CI: 0.65–0.76) for all-cause mortality and 0.68 (95% CI: 0.63–0.73) for the composite endpoint. Notably, the TRI-SCORE showed particularly strong performance in surgically managed patients, with an AUC of 0.86 (95% CI: 0.75–0.96) for mortality.

Conclusions

This study represents the first external validation of all currently published prognostic risk scores for severe TR within a real-world cohort. The TRI-SCORE demonstrated the highest predictive accuracy, particularly in patients undergoing surgical intervention, reinforcing its utility in guiding clinical decision-making. Its simplicity and feasibility further enhance its applicability in routine clinical practice.

P54**MULTIMODAL EVALUATION OF RIGHT VENTRICULAR REMODELING AND EXERCISE RESPONSE AFTER TRICUSPID TRANSCATHETER EDGE-TO-EDGE REPAIR**

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Introduction

Once regarded as a neglected valvular disorder, Tricuspid Regurgitation (TR) is now recognized as a progressive condition with considerable clinical burden. Tricuspid transcatheter edge-to-edge repair (T-TEER) offers a minimally invasive treatment option for high-risk patients, yet evidence on functional recovery, especially under stress conditions, remains limited. This study aims to explore the extent of functional recovery under physical exertion and the occurrence of early right ventricular reverse remodeling (eRVRR) following T-TEER in patients with severe TR. To identify associations between the presence or absence of risk factors compared to the clinical improvement.

Methods

In this single-center, retrospective case-control study, 82 patients (mean age 77.2 ± 7.8 years; 78% female; BMI 26.65±5.15) with advanced tricuspid regurgitation (TR) were enrolled. Thirty-two patients underwent transcatheter tricuspid edge-to-edge repair (T-TEER) by implanting the Triclip® device, while 50 matched controls received standard care. These patients did not undergo T-TEER due to one or more exclusion criteria, including refusal of the procedure, excessive frailty, or contraindications related to severe pulmonary hypertension documented by right heart catheterization. All participants underwent a comprehensive multimodal assessment, including transthoracic and transesophageal echocardiography, 6-minute walk test (6MWT), and semi-supine cycle ergometer stress echocardiography. Right heart catheterization was selectively performed in patients with clinical indications for hemodynamic assessment. The mean follow-up was 11.7 ± 7.5 months, with repeated stress testing to assess functional recovery and right heart performance.

Results

A total of 82 patients were included, 39% in the case group and 61% in the control one. Groups were matched for age and sex, without significant differences in main baseline anamnestic and risk factors (all p>0.05). Intergroup differences became significant post-intervention (p < 0.001), despite comparable baseline distributions. A significant improvement in functional and exercise performance was observed in the case group post-treatment: a downward shift in NYHA class was observed in the case group post-treatment (Figure 1), while controls showed an upward trend (p<0.001); at follow-up, the 6MWT distance was markedly higher in the case group (380.8 ± 70.6 meters) compared to controls (25.5 ± 6.6 meters, p < 0.001), while at baseline the 6MWT distance did not differ significantly between the two groups (44.8 ± 10.54 meters in controls, 46.25±10.39 meters in cases, p=0.52). Furthermore, even though Borg scale scores did not differ significantly between groups (p = 0.55), self-reported symptoms' improvement was substantial in cases and contrasted with a worsening trend in controls (p < 0.001). Parameters not measurable in controls, such as peak workload on cycle ergometry, also showed marked improvement post-intervention in the case group (from 25 ± 0 Watt to 77.5 ± 7.6 Watt; p < 0.001). Regarding the eRVRR, a significant post-treatment reduction in tricuspid regurgitation grade was observed in the case group compared to worsening in controls (p < 0.001), as illustrated in Figure 2. Similarly, also TAPSE, TAPSE/SPAP ratio and sPAP at rest significantly improved at follow-up (all p<0.001) in cases compared to the control group, as well as to the same parameters evaluated in cases previously to the procedure (Figure 3). A significant reduction in Peak exercise sPAP was also observed in cases when comparing pre- and post-procedural values (from 54.34±2.20 to 34.84±11.05 mmHg; p < 0.001), whereas this parameter was not available in controls. Finally, improvements in key parameters (including sPAP at rest, TAPSE, TAPSE/SPAP ratio and 6MWT distance) were statistically more consistent in patients without major cardiovascular risk factors (such as diabetes, dyslipidemia, smoking, and previous events) compared to those with such conditions (all p < 0.05).

Conclusions

T-TEER led to significant functional improvement under exertional conditions and induced signs of early right ventricular reverse remodeling. These findings underscore the potential of T-TEER not only to increase functional capacities but also to improve right-sided heart performance

in patients with advanced TR and right heart failure. The magnitude of benefit was modulated by baseline clinical risk factors, reinforcing the importance of timely referral and intervention, before patients progress beyond candidacy for transcatheter therapy.

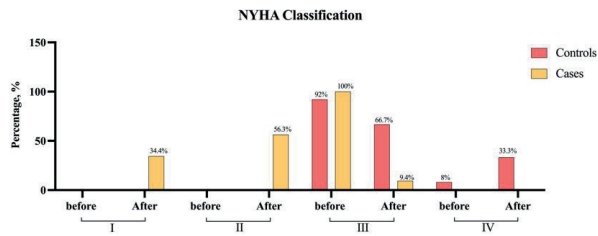


Figure 1. Comparison of NYHA classification between case and control groups at baseline and follow-up.

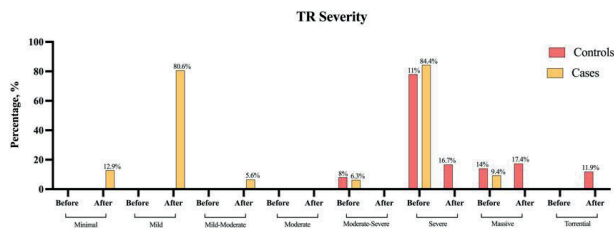


Figure 2. Comparison of Tricuspid Regurgitation severity between case and control groups at baseline and follow-up.

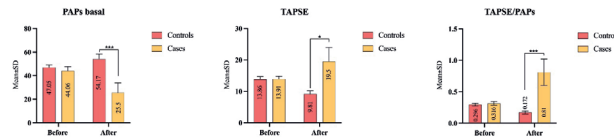


Figure 3. Comparison of main early Right Ventricle Reverse Remodeling parameters (in order PAPs basal, TAPSE, TAPSE/PAPs) between case and control groups at baseline and follow-up.

OTHER

P55

DURATION OF DUAL ANTIPLATELET THERAPY IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION FOR BIFURCATION LESIONS: INSIGHTS FROM THE BIFURCAT REGISTRY

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Introduction The optimal duration of dual antiplatelet therapy (DAPT) after percutaneous coronary intervention (PCI) remains debated, particularly for bifurcation lesions, which are associated with increased thrombotic risk. Shorter DAPT regimens may reduce bleeding but could compromise ischemic protection.

Methods This study analyzed data from the ULTRA and BIFURCAT registries, including patients treated with PCI for bifurcation lesions. Patients requiring oral anticoagulation were excluded. DAPT duration was categorized as <6 months, 6-12 months and >12 months. The primary endpoint was major adverse cardiac events (MACE), a composite of all-cause death, myocardial infarction, target lesion revascularization, and stent thrombosis. Cox regression analysis was used to assess the association between DAPT duration and MACE.

Results Among 6,729 patients, 425 (6%) received DAPT <6 months, 3446 (51%) for 6-12 months and 2,858 (42%) for >12 months. At 800-day follow-up, MACE rates were higher with shorter DAPT (19.5% vs. 10% vs. 5.9%, p<0.001). Adjusted hazard ratios for MACE were significantly higher for DAPT <6 months (HR 4.8, 95% CI 1.8-12.7) and 6-12 months (HR 2.7, 95% CI 1.5-4.7) compared to >12 months. This trend was consistent in acute coronary syndrome (ACS) patients but not in stable patients or those on aspirin plus clopidogrel.

Conclusions In PCI-treated bifurcation lesions, particularly in ACS patients, shorter DAPT duration (<6 months) is associated with a higher risk of adverse events. These findings highlight the need to consider bifurcation lesions as a key factor in tailoring DAPT duration.

P56

MOVING BEYOND E/E': RETHINKING LEFT ATRIAL PRESSURE ESTIMATION VIA ECHOCARDIOGRAPHY

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Introduction

Although transthoracic echocardiography (TTE) reliably estimates several parameters obtained via right heart catheterization (RHC), the non-invasive assessment of left atrial pressure (LAP), i.e., pulmonary capillary wedge pressure, remains a key limitation. Existing echocardiographic algorithms, based on left heart indices such as E/e' and pulmonary vein flow, exhibit only modest correlation with invasively measured LAP, particularly in acute cardiovascular conditions. We propose a novel, physiologically grounded approach that estimates LAP by TTE through pulmonary hemodynamic parameters.

Methods

LAP depends on two key variables: diastolic pulmonary artery pressure (dPAP) and pulmonary vascular resistance (PVR). Drawing on previous physiological principles, we derived a simplified formula via linear interpolation: $LAP = (1.2 - PVR/10) \times dPAP - 2$. Both dPAP (obtained from the end-diastolic pulmonary regurgitation gradient) and PVR (calculated using the Abbas formula) are easily measurable by TTE and can be directly substituted into the formula to estimate LAP.

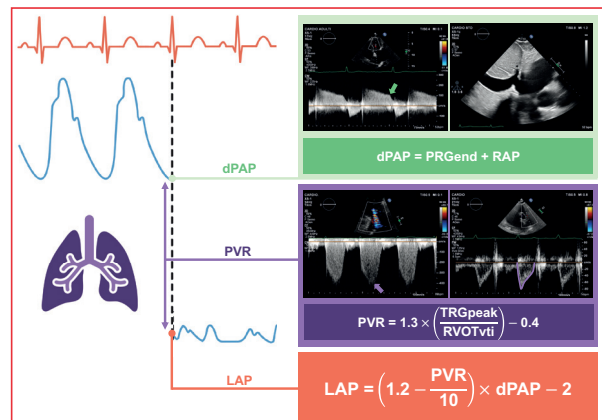
Results

The formula was validated against invasively measured LAP in 100 consecutive patients enrolled in the multicenter prospective TECH (Testing Echocardiography vs. Catheterization in Hemodynamics) registry (ClinicalTrials.gov ID: NCT06859047). It demonstrated a correlation of $r = XXX$ (95% CI: XXX-XXX) and a Bland-Altman bias of XXX mmHg (limits of agreement: XXX-XXX) when compared with RHC-derived LAP.

Conclusions

This novel, non-invasive method allows for practical estimation of LAP using routinely assessed pulmonary parameters by TTE.

*The present formula is currently being validated in the multicenter prospective TECH (Testing Echocardiography vs. Catheterization in Hemodynamics) registry (ClinicalTrials.gov ID: NCT06859047). Final results regarding the accuracy of the method will be presented at the GISE Congress.



P57

INCLISIRAN: LA NOSTRA ESPERIENZA

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Introduzione La riduzione del colesterolo legato alla lipoproteina a bassa densità (C-LDL) risulta essere associato ad un minor numero di eventi cardiovascolari, proporzionale all'entità della riduzione plasmatica di C-LDL. Sulla base di queste evidenze, le attuali linee guida hanno ridotto il target terapeutico, proponendo nella maggior parte dei casi una terapia ipolipemizzante di combinazione. A tal proposito, studi osservazionali dimostrano che meno del 50% raggiunge i valori raccomandati a causa di una scarsa aderenza terapeutica e, spesso, mancata prescrizione dei trattamenti farmacologici da parte dei professionisti sanitari. L'Inclisiran, con il suo meccanismo basato sul silenziamento genico, potrebbe superare alcune di queste problematiche. Di seguito riportiamo la nostra esperienza con Inclisiran da Marzo 2023 a Dicembre 2024 presso il reparto di Cardiologia ed Emodinamica del Presidio Ospedaliero "Umberto-I" di Siracusa.

Metodi Sono stati arruolati 115 pazienti, con un'età media di 65 anni e

prevalentemente di sesso maschile. Tutti i pazienti, a rischio cardiovascolare molto alto, presentavano C-LDL > 70 mg/dL nonostante trattamento con statine ad alta-moderata intensità (91%) ed ezetimibe (84%). Le somministrazioni del farmaco sono state realizzate seguendo le indicazioni della casa farmaceutica (0,3 mesi e 6 mesi). E' stato quindi realizzato un follow-up clinico e laboratoristico a 3 mesi e 9 mesi dalla prima somministrazione.

Risultati Tra i 115 pazienti inizialmente identificati, 104 hanno ricevuto il trattamento a 3 mesi e 88 hanno completato la dose a 9 mesi. Dopo il primo controllo trimestrale, l'83,6% dei pazienti ha raggiunto un target di C-LDL < 55 mg/dL, dato che si è mantenuto pressoché costante dopo 9 mesi di terapia (87,5% < 55 mg/dL). La maggiore riduzione di colesterolo si è osservata nella popolazione sottoposta a concomitante terapia con statine ed ezetimibe (93,1% a 3 mesi, 93,5% a 9 mesi). Inoltre, una quota maggiore del 50% ha raggiunto livelli di C-LDL < 40%. Nessun evento avverso è stato segnalato durante il follow-up.

Conclusioni La nostra esperienza ha mostrato come la terapia con Inclisiran, soprattutto in combinazione con statine ed ezetimibe, sia sicura ed associata ad eccellenti risultati a breve e medio termine nel raggiungimento dei target terapeutici definiti dalle società internazionali.