Poster

CORONARY: ACUTE CORONARY SYNDROME GENERAL

P1

SERUM HEMOGLOBIN TO CREATININE RATIO PREDICTS ADVERSE OUTCOMES IN PATIENTS WITH ST-ELEVATION MYOCARDIAL INFARCTION

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Introduction

Anemia and renal impairment are key determinants of adverse outcomes in patients with acute coronary syndrome (ACS). The serum hemoglobin to creatinine (Hb/Cr) ratio, a simple and universally accessible index combining these two factors, was found to be predictive of adverse outcomes in ACS patients. However, there is limited evidence on its performance in the specific setting of ST-elevation myocardial infarction (STEMI). The aim of the study was to evaluate the prognostic impact of the Hb/Cr ratio at discharge in STEMI patients.

Methods

Out of 23,270 ACS patients enrolled in the international PRAISE registry between 2003 and 2019, we included only STEMI patients (11,236), excluding those with other forms of ACS or missing data. The primary endpoint was all-cause mortality at one-year follow-up. Secondary endpoints were major bleeding and the composite of all-cause mortality or reinfarction at oneyear follow-up. A cut-point analysis using Liu's method was run to determine the most discriminative Hb/Cr ratio values for predicting the outcomes of interest.

Results

The cut-point analysis identified a cut-off value of 13.68 as the most discriminative for predicting all-cause mortality, and 14.42 for both secondary endpoints. Based on the discriminative value for all-cause mortality, we divided our population into low Hb/Cr (2,982 patients, 26.5%) and high Hb/Cr (8,254 patients, 73.5%) groups. Patients in the low Hb/Cr group were older, had a higher prevalence of cardiovascular risk factors, comorbidities, and pre-existing coronary artery disease, and tended to receive less intensive medical therapy at discharge. One-year postdischarge, all-cause mortality (8.7% vs. 2.4%; $p < 0.001$), major bleeding (5.0% vs. 2.4%; $p < 0.001$), and the composite of all-cause mortality or reinfarction (11.5% vs. 4.9%; $p < 0.001$) were significantly higher in the low Hb/Cr group. Bivariate regression analysis showed that the Hb/Cr ratio was inversely associated with all-cause mortality (OR 0.87; CI 0.85–0.88; $p < 0.0001$), major bleeding (OR 0.92; CI 0.90–0.94; $p < 0.0001$), and the composite of all-cause mortality or reinfarction (OR 0.91; CI 0.89–0.92; $p < 0.0001$). These associations remained significant after an extensive adjustment for several covariates, including cardiovascular risk factors,comorbidities, and discharge medical therapy: all-cause mortality (OR 0.94; CI 0.92–0.96; $p < 0.0001$), major bleeding (OR 0.93; CI 0.91–0.96; $p < 0.0001$), and the composite of all-cause mortality or reinfarction (OR 0.96; CI 0.94–0.97; $p < 0.0001$). Propensity score matching analysis, adjusting for the same covariates, confirmed that event rates at one year follow-up were significantly higher in the low Hb/Cr group. Eventually, the Hb/Cr ratio proved superior in predicting all-cause mortality compared to its individual components, with an AUC of 0.68 versus 0.65 for hemoglobin and 0.65 for creatinine, with statistically significant differences ($p < 0.0001$).

Conclusions

Hb/Cr ratio at discharge appears to be associated with one-year adverse outcomes in STEMI patients. Further research is warranted before routinely considering this index in clinical practice.

P2

SINDROME CORONARICA ACUTA DA ANGINA MICROVASCOLARE: UN CASE REPORT

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Introduzione

La disfunzione microvascolare coronarica (CMD) si riferisce ad un'ampia gamma di contesti clinici in cui il microcircolo è compromesso morfologicamente e/o funzionalmente, portando all'ischemia miocardica con sintomi anginosi (angina microvascolare). In base al meccanismo patogenetico, esistono due possibili tipologie: spasmo microvascolare e ridotta riserva di flusso coronarico (CFR). Il gold standard per la diagnosi della CMD è rappresentato dalla coronarografia con ausilio di test funzionali: nel primo tipo con il test provocativo all'acetilcolina per la diagnosi di disfunzione endotelio-dipendente; nel secondo tipo la determinazione della CFR e dell'indice di resistenza microvascolare (IMR). Riportiamo un caso emblematico di CMD dovuto a spasmo microvascolare endotelio-dipendente in un giovane uomo con episodi di angina tipica sotto sforzo ed a riposo soprattutto notturno.

Case Report

Uomo di 54 anni senza fattori di rischio cardiovascolari noti. A seguito di una seduta di escursionismo in montagna della durata di circa 6 ore, il paziente accusava cardiopalmo associato a sensazione di pesantezza al braccio sinistro e malessere generale. La stessa sera il paziente accedeva al Pronto Soccorso per il ripresentarsi della medesima sintomatologia. in tale occasione venivano eseguiti ECG ed ecocardioscopia che non davano riscontro di anomalie di rilievo, tuttavia agli esami ematochimici veniva evidenziato significativo movimento degli indici di miocardionecrosi, motivo per il quale veniva predisposto ricovero in cardiologia per il prosieguo dell'iter diagnostico-terapeutico.

In cathlab si aveva evidenza coronarie esenti da lesioni significative e ventricolo sinistro di normali dimensioni e funzione contrattile (60%). In considerazione del quadro clinico-anamnestico si decideva di eseguire test con acetilcolina secondo protocollo. A seguito della prima infusione si assisteva a comparsa di angina e, contestualmente, mentre all'angiografia si aveva riscontro di slow-flow al livello del circolo epicardico sinistro (TIMI 2), al tracciato ECGgrafico si evidenziavano onde T iperacute nelle derivazioni precordiali. Infine a seguito di infusione intracoronarica di nitroglicerina, si assisteva a rapido ripristino del normale flusso intracoronarico (TIMI 3). Tali rilievi sono risultati pertanto diagnostici di angina microvascolare.

Al termine della degenza il paziente veniva dimesso al proprio domicilio con indicazione ad assunzione di Calcio Antagonista Centrale e Ranolazina, con netto miglioramento della sintomatologia.

Conclusioni

Questo case report descrive l'importanza di una diagnosi precisa e tempestiva di angina microvascolare data da disfunzione endotelio-dipendente.

P3

PREDICTORS AND IMPACT OF CARDIOGENIC SHOCK IN OLDEST OLD STEMI PATIENTS: RESULTS FROM A MULTICENTER REGISTRY IN NORTHERN ITALY

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Introduction

Cardiogenic shock (CS) is the most frequent cause of in-hospital mortality after ST-segment elevation myocardial infarction (STEMI). Despite improving survival in recent years, patient morbidity and mortality remain high, and data about CS in oldest old (age ≥ 85 years) STEMI patients are scarce. We aim to evaluate the incidence of CS in oldest old STEMI patients undergoing an invasive treatment strategy focusing on predictors and impact of CS on mid-term outcome.

Methods

Consecutive very elderly STEMI patients undergoing invasive treatment were included in a retrospective multicenter real-world registry of 6 Hub hospitals in Northern Italy. CS was defined according to clinical criteria. Multiple logistic regression modeling was performed to assess the independent factors associated with CS. A cox regression analysis was performed to predict early mortality for patients with CS.

Results

Among 674 STEMI patients consecutively enrolled (mean age 88.6 (2.9) years, 51.6% females). Of these, 80 subjects (12%) presented with CS. Age was not statistically different between CS and non-CS group (89.1

(3.4) vs 88.6 (2.9), p = 0.27). CS was found to be associated with a history of previous acute myocardial injury (p < 0.01), known coronary arterydisease (p = 0.02) and peripheral artery disease (p = 0.02). At the multiple logistic regression, a previous acute myocardial infarction (AMI) was the only predictor of CS (OR: 2.42, 95% CI: 1.32 – 4.42, p=0.01). The rate of in-hospital mortality was significantly higher in patients presenting with CS compared to non-CS (62% vs 13.4%, p < 0.01). In regard to 30-day mortality, CS was associated with a higher risk of mortality at 30 days (adjusted HR: 4.21, 95% CI: 2.19 to 7.78, p < 0.01) despite invasive management. Among patients who survived hospitalization, CS at presentation was not associated with higher risk of mortality at one-month follow up.

Conclusions

Cardiogenic shock is an ominous complication of acute myocardial infarction. At one-month follow up, very elderly STEMI patients presenting with CS had a higher risk of mortality when compared to non-CS patients. Among survivors of hospitalization, this risk seems not to remain during the first month after discharge.

CORONARY: CHRONIC CORONARY SYNDROME, PCI

P4

PROCEDURAL AND IN-HOSPITAL OUTCOMES OF PERCUTANEOUS CORONARY INTERVENTION USING EXCIMER LASER CORONARY ATHERECTOMY FOR COMPLEX CORONARY LESIONS: THE ACCELERATE (EAST SICILY EXCIMER LASER ATHERECTOMY) REGISTRY

Salvatore Davide Tomasello[1], Carla Rochira[1], Alessandro Mazzapicchi[1], Salvatore Adriano Azzarello[1], Alessandro Di Giorgio[1], Francesco Scardaci[1], Marco Legnazzi[1], Vincenzo Argentino[1], Silvia Crescenzia Motta[2], Giorgio Sacchetta[2], Giombattista Barrano[2], Giulia Laterra[2], Giovanni Ruscica[2], Paolo Mazzone[2], Andrea Sole[2], Nadia Garro[2], Paola Murè[2;2], Francesco Amico[1], Marco Contarini[2]

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Introduction

Excimer laser coronary atherectomy (ELCA) is an emerging therapy to treat a wide spectrum of complex coronary lesions, such as thrombotic lesions, severe calcific lesions, non-crossable or non-expandable lesions, chronic occlusions, stent under-expansion and stent restenosis.

Methods

The aim of this study was to examine procedural and in-hospital outcomes in a consecutive cohort of patients treated with ELCA for complex coronary lesions. This is a prospectical multi center observational study.

Results

From July 2018 to December 2023 a total of consecutive 320 patients (age 73 ± 9 years) with 386 lesions treated with ELCA were enrolled in the study. Notably, the clinical presentation at the time of index procedure was an acute coronary syndrome in 42.6% of the cases. The mean of left ventricular ejection fraction was 43 ± 9 %. The population was at high coronary anatomy complexity and a high risk of cardiovascular events (Syntax score 27 ± 10,3, STS score 9.5 ± 10,4). The left anterior descending was treated in 45.1% of cases, left main in 12.8%, left Circumflex in 20.6%, right coronary artery in 20.6% and in only one case (0.9%) a saphenous vein graft was the artery treated. A total of 1.8 ± 1.4 stents were implanted for an average of 40.6 ± 32.1mm. Procedural and fluoroscopy time were 66.5 ± 42.6min and 26.3 ± 16.4min respectively. Procedural success was achieved in 95% of cases. The rate of complete revascularization was obtained in 62% of cases. Two patients died for an acute stent thrombosis some hours after procedure while 5 patients had a procedural myocardial infarction. No other major events happened in hospital and at 30-days of clinical follow up.

Conclusion

This study showed that ELCA is able to provide high rate of angiographic and clinical success in a real-world cohort of complex patients.

CORONARY: DEB

P5

ANGIOGRAPHIC AND CLINICAL IMPACT OF BALLOON INFLATION TIME IN PERCUTANEOUS CORONARY INTERVENTION WITH SIROLIMUS-COATED BALLOON: A SUBANALYSIS OF THE EASTBOURNE STUDY

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Introduction

The implantation technique strongly influences the outcome of percutaneous coronary intervention (PCI) with drug-coated balloon (DCB). The optimal DCB inflation time is unclear: current consensus documents suggesting 30-60 seconds based on Experts' opinion. However, clinical studies comparing the prognostic role of different inflation times are scarce and mainly involve paclitaxel-coated balloons. In this study we aimed to assess the impact of different inflation times in patients undergoing PCI with a sirolimus-coated balloon (SCB).

Methods

We conducted a post-hoc analysis of the prospective, multicenter, EASTBOURNE study, classified into two study groups according to balloon inflation time: long (>30 s) versus short (≤30 s). The primary endpoint was target lesion revascularization (TLR) at 24-month follow-up. Angiographic endpoints (the rate of bailout stenting and post-procedural TIMI flow <3) were also addressed.

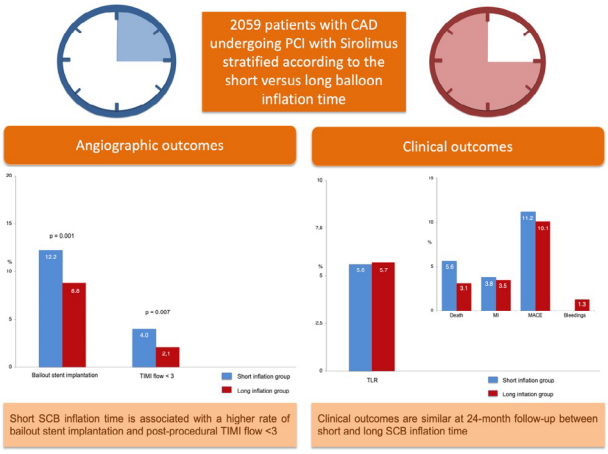
Results

A total of 2289 lesions (2092 in the long inflation group, 197 in the short inflation group) were included in the analysis. Median balloon inflation time was 60 s in the long inflation and 30 s in the short inflation group. The two study groups experienced a similar rate of TLR [6.2% in the short versus 6.3% in the long inflation group, p= 1.00]. Interesting, the rate of bailout stent implantation and post-procedural TIMI flow <3 was higher in the short SCB inflation time, as compared to the standard strategy **(Figure 1).**

Conclusions

Short vs. long SCB inflation time is associated with a higher need of bailout stenting after PCI with SCB, with similar clinical outcomes at 24-month follow-up.

Figure 1. Graphical summary of the study



Abbreviations: CAD: coronary artery disease; MACE: major adverse cardiovascular events; MI: myocardial infarction; PCI: percutaneous coronary intervention; SCB: sirolimus-coated balloon; TIMI: Thrombolysis in myocardial infarction; TLR:

P6

LONG-TERM CLINICAL FOLLOW-UP IN PATIENTS UNDERGONE DRUG ELUTING BALLOONS ANGIOPLASTY

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Background

So far little is known about long-term follow-up in patients undergone to drug eluting balloons (DEB) angioplasty.

DEB angioplasty offers a valuable alternative to drug eluting stent (DES), especially in specific scenarios such as intrastent restenosis (ISR) and small vessel disease. Its primary advantages include reduced restenosis rates, the absence of a permanent implant, and a lower risk of late thrombosis. However, long term positive effects are unknown and studies are needed to fully establish its role in the treatment of coronary artery disease.

Methods

We retrospectively analyzed a consecutive series of patients undergoing DEB angioplasty for both de novo lesions and ISR in Legnago Hospital between January 2017 and December 2019. Baseline and procedural data as well as last available follow-up were collected with the aim to evaluate long-term safety and efficacy of DEB angioplasty.

Primary endpoint was the rate of major adverse and cerebrovascular events (MACCE) including death or rehospedalization from myocardial infarction, stroke, major bleeding or clinical driven target vessel revascularization. All of our patients were treated with DEB angioplasty, considering both de novo lesions and in ISR to have a bigger sample. A long-term clinical follow was made, by evaluating clinical conditions of our patients at 5 years after angioplasty. We used NYHA classification and Canadian clinical classification to estimate the clinical status of our patients. Our aim was to highlight if there is a declination regarding symp-

toms and if any hemodynamic deterioration comes out. Concerning the procedure we used different type of DEB such as In Pact Falcon, Prevail and Magic Touch, with different diameters and lenght.

Results

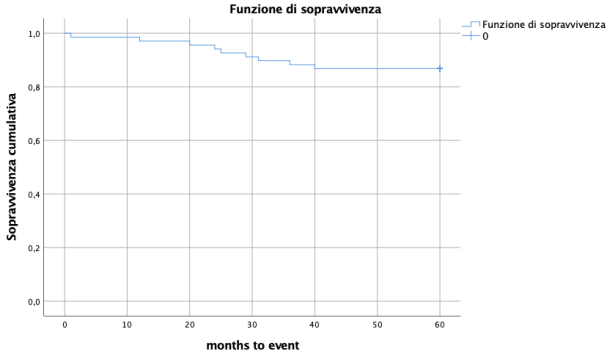
A total of 68 patients, with an average age of 65 years old, were treated with DEB angioplasty in the selected period. 11.7% were women (n=8), 52.4% de novo lesions. The data showed that DEBs with a 20 mm length were used in 87% of cases and a diameter of 2mm were applied more frequently. The majority of the lesions treated with DEB was located on the mid-segment of the left anterior discending artery, with a 17%. The median follow-up for clinical events was 56,02 months. The mortality rate was 16,2 % ,11 patients deceased, just one of them faced the death because of a cardiovascular related complication. The rate of MACCE was 8% of all the rehospidalizations we registered. Only one of our patients was rehospidalized because of a myocardial infarction with ST elevation (STEMI), he also had a clinical deterioration that led to Heart Failure (HF). There wasn't any episode of stroke or major bleeding, but 3 patients had respiratory insufficiency. However 15% of our patient needed to be admitted to our Hospital because angina or acute coronary syndrome. Twice a positive stress testing was the reason of a urgent angioplasty. Only for two patients a surgical strategy was necessary and there was the indication to do a Coronary Artery Bypass Grafting (CABG).

At last clinical follow-up 52 % of the population was classified as NYHA class 2, overall there wasn't a worsening in term of clinical status from the one at the discharge.

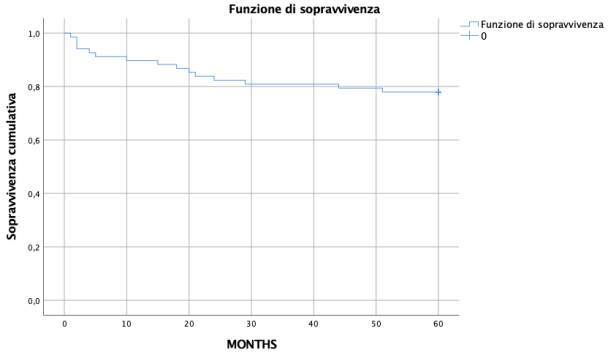
Conclusion

In our single center experience DEB proved to be a valid alternative to stent angioplasty for both de novo lesions and ISR at long-term follow-up. This retrospective analysis has many limitations and is not supposed to suggest new treatment philosophy, but could be a suggestion for ideation of novel RCT. In conclusion DEBs represent a valuable tool in the interventional cardiologist's armamentarium, particularly for patients with ISR, small vessel disease, or those who need to minimize the duration of antiplatelet therapy. Ongoing research and longer-term follow-up studies are essential to further define the role of DEBs in different clinical settings and to compare their performance against the latest generation DES.

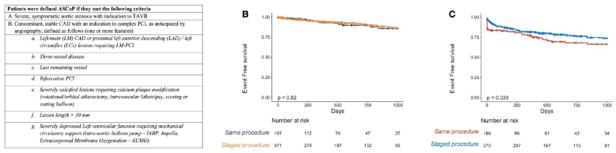
Curva di sopravvivenza eventi MACCE:



Curva di sopravvivenza eventi SCA:



CORONARY: PCI LESION / PATIENT SUBSETS



P7

A RANDOMIZED CLINICAL STUDYCOMPARING REVERSE T-STENTING AND MINIMAL PROTRUSION WITH EXTERNAL MINICRUSHFOR TREATMENT OF COMPLEX CORONARY BIFURCATION: T-REX TRIAL FIRST PRELIMINARY RESULTS

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Introduction

Nowadays, no studies compare the Reverse-TAP and the External Minicrush in treating complex coronary bifurcation, so eventually procedural, clinical and safety differences remain unknown.

Methods

This study is a randomized, prospective, multicenter trial comparing long-term clinical outcomes of 361 consecutive patients with complex coronary bifurcation lesions according to DEFINITION criteria involving both left and non-left main coronary artery and randomized in a 1:1 ratio to Reverse-TAP and External Minicrush. Control coronary angiography at 12 months is planned, and clinical follow-up will be extended to 5 years. The primary endpoint is a composite of target lesion failure (TLF) (composite of all cardiovascular death, target-vessel myocardial infarction (TVMI), ischemia-driven target lesion revascularization (ID-TLR) + Definite or probable stent thrombosis (ST) + in-stent restenosis (ISR) >50% at coronary angiography at 12 months. Secondary endpoints are: a) composite of cardiac death + TVMI + ST and b) composite of cardiac death + TVMI + ST +TLR at 3 and 5 years.

Results

At the moment of the abstract submission we have enrolled 53 patients. We will present the result of the overall number of the patients enrolled before the start of the congress.

Conclusions

We discuss results according to the results obtained before the start of the congress according to the publication policy of the trial.

P8

PERCUTANEOUS CORONARY INTERVENTION VS CORONARY ARTERY BYPASS GRAFTING IN LEFT MAIN DISEASE ACCORDING TO PATIENTS' SEX: A META-ANALYSIS

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Introduction

Although coronary artery bypass grafting (CABG) has consistently demonstrated superior long-term outcomes, percutaneous coronary intervention (PCI) has gained increasing interest as an alternative revascularization strategy for unprotected left main (ULM) disease. In this context, the role of the sex category has gained mounting interest in the view of a tailored approach for coronary revascularization. The aim of this meta-analysis was to investigate outcomes after PCI or CABG for ULM disease according to patients' sex.

Methods

Randomized controlled trials (RCTs) and adjusted observational studies comparing PCI vs CABG in patients with ULM disease and reporting outcomes according to sex category were included. Major adverse cardiovascular events (MACE) was the primary composite endpoint. All-cause mortality and repeated revascularization were the secondary endpoints.

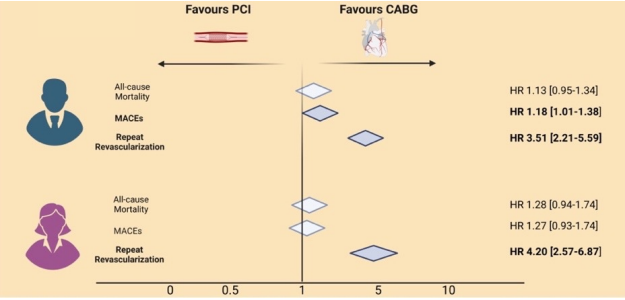
Results

Ten studies (3 RCTs, 7 adjusted observational), encompassing 22141 patients with ULM disease (13411 patients in the PCI group and 8730 in the

CABG group) and a median follow-up of 5 years were included. Among male patients, PCI was associated with an increased risk of MACE (HR 1.18, 95% CI 1.01-1.38) while no difference was observed for female patients. No significant differences between PCI and CABG were found in all-cause mortality for both sex categories. Repeated revascularization risk was significantly higher in the PCI group for both sexes (HR 3.51, 95% CI 2.21-5.59 and HR 4.20, 95% CI 2.57-6.87 for males and females respectively) compared with CABG.

Conclusions

Among male patients with ULM disease, CABG was associated with a significantly lower risk of MACE, while no differences between PCI and CABG were observed in females. In both male and female patients with ULM disease, PCI was associated with a higher risk of repeated revascularization compared with CABG.



P9

A CASE OF ZERO CONTRAST PCI GUIDED BY IVUS NIRS AND IFR

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Introduction

The most frequently accepted definition of CIN is an absolute increase in creatinine of ≥0.5 mg/dl or a ≥25% increase from baseline 48–72 h after the administration of contrast. This represents a frequent event in hospitalized patients and coronary angiography with PCI count for the higher rates of CIN and CM-AKI than other procedures. It is known that CIN is associated with increased morbidity and mortality, increased healthcare costs especially for longer hospital stays and lower clinical outcomes. Nowdays, patients undergoing PCI show more comorbidities and predisposing risk factors for CIN while on the other hand require challenging intervention due to higher degree of anatomical complexity. In this context, the sparing of CM during PCI is focal to increase the safety of the intervention and the use of imaging and physiology technologies is mandatory to ensure the quality of the intervention. We present a case of "zero contrast PCI" perfomed with iFR and IVUS guidance.

Methods

A 72 years old man, with hypertension and type II diabetes as risk factors, presented to our institution with a lateral STEMI subjected to pPCI with implant of 3 DES on right coronary artery and one DCB on postero-lateral branch. The LAD showed a critic calcific plaque on the proximal and mid tracts to be approached during a staged angioplasty. Soon after the procedure, the patient developed CIN due to contrast retention in a condition of hydroureteronefrosis determined by a papillar urotelial carcinoma. After a partial recovery, helped by a bilateral urinary diversion, LAD treatment was deemed necessary in order to allow the prosecution of the oncological follow-up and therapy, which comprised a total cystectomy. Considering the high risk of CIN in a CKD patient and the urgency of the operation, a no-contrast procedure was planned.

Results

Through a guide catheter XB 3,5 6F the left main was engaged and the LAD wired with a Sion Blue guidewire using the angiograms of the primary angioplasty as reference. Furthermore, a first complete run of IVUS-NIRS system was performed, showing a long disease (55 mm) severely calcified with some focal stenosis characterized by a considerable share of calcium (270°). Using the same data, it was possible to size the vessel and perform multiple pre-dilation with NC balloons followed by angioplasty with two different Paclitaxel DCBs, making a final IVUS-NIRS control to check the result and exclude dissections. At this point an iFR was performed which documented residual significant flow reduction distally (0.76), with the major loss at the medium tract on the pullback. Consequently, using the images of the IVUS-NIRS as reference for the length and the size a more aggressive predilatation with one to one sized non-compliant balloon was performed. A second IVUS-NIRS run showed multiple fractures in the calcium arch, so two DES (2.25 x 40 mm and 2.75 x 26 mm) were deployed in overlap. The result was optimised with aggressive post-dilatation using one to one sized non-compliant balloon (3.0 mm and 3.5 mm). During all PCI phases patient remains painless with optimal vital signs. The final IVUS run showed a good stents expansion, without geographic miss distally and proximally and a optimal apposition at the proximal edge of the stent implanted in the medium tract. We performed a final IFR that confirmed the optimal result (0.93 distally).

Conclusions

Throughout the use of imaging and physiology technologies today it is possible and safe to carry out the intervention without administering contrast media. The approach to this case allowed the completion of the revascularization without causing additional renal injury in a fragile patient. Both the planning of the procedure after one week from the primary revascularization allowing proper wash-out and pre-treatment and the total sparing of contrast media contributed to the safety. Our experience can be an example of how the concern of CIN is consistent in an increasingly high proportion of patients undergoing PCI and the implementation of imaging and physiology technologies is a fundamental tool to increase the quality of the intervention keeping the patient safe from complication.

P10

VIRTUAL INTELLIGENCE SELECTING OPTIMAL MANAGEMENT OF MULTIVESSEL CORONARY DISEASE (VISION-MVD): PRELIMINARY DATA FROM AN OBSERVATIONAL MULTICENTER STUDY

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Introduction

Multidisciplinary Heart Team (HT) play a crucial role in managing multivessel coronary artery disease (CAD), ensuring tailored treatment decisions involving percutaneous coronary intervention (PCI), coronary artery bypass grafting (CABG), and optimal medical therapy (OMT). Recently, chat-based artificial intelligence (AI) has gained prominence for its versatility and potential applications in healthcare services and a preliminary study demonstrated the feasibility of using Open AI's generative pre-trained transformer (GPT)-4 model to guide treatment decisions in patients with aortic stenosis. No study has yet focused on the model's capability in handling complex decisions regarding multivessel CAD and its concordance with standard HT recommendations. Thus, this study was aimed at assessing the concordance between treatment recommendations provided by ChatGPT and those made by HT for patients with multivessel CAD.

Methods

Patients diagnosed with multivessel CAD and discussed at HT meetings in two high-volume Italian centers in 2022 were retrospectively reviewed. This paper presents preliminary data from the first patients included in the study, which is currently concluding its retrospective enrollment dating back to 2021 and is starting its prospective phase. Patients' case were standardized into a textual prompt including 21 clinical variables, results of the Syntax score I, Euroscore II mortality, STS score 2 mortality, and a dedicated section detailing anatomical characteristics of the primary coronary lesion. The textual prompt was then presented to the GPT-4o model to generate a treatment recommendation. The AI-generated decisions were then compared with the HT's decisions.

Results

The study included 36 patients, predominantly male (N=30, 83%) and presenting with chronic coronary syndrome (N=25, 69%). The mean Syntax score was 24±8, the mean Euroscore was 2.42±1.57, and the mean STS score was 1.78±1.04. The HT's recommended decisions were CABG in 21 (59%), PCI in 12 (33%), and OMT in 3 (8%) cases. ChatGPT's decisions were concordant in 22 (61%) cases. Most treatment reclassifications pertained to the HT's indicated PCI group, with 66% (8) of the recommendations not confirmed by the AI, while only 24% (5) of CABG and 33% (1) of OMT recommendations were overturned. ChatGPT demonstrated good sensitivity (76%) and intermediate specificity (62%) for identifying patients suitable for CABG, good specificity (77%) but low sensitivity (22%) for recommending PCI, and extreme specificity (100%) with intermediate sensitivity (66%) for OMT.

Conclusions

ChatGPT shows a good but not perfect correlation with HT recommendations, indicating a gray area of evaluation with some variables that cannot be properly abstracted and summarized by the AI algorithm but are instead considered in the decision-making process of the human HT. However, this technology could serve as a valuable adjunct to HTs, prompting more in-depth discussion in cases of discrepancy to ensure comprehensive patient evaluation. Further research is warranted to solidify our understanding of AI's role in enhancing HT decision-making processes.

P11

FAILURE OF RADIAL APPROACH AND MULTIPLE TRANSRADIAL CORONARY PROCEDURES: A SINGLE CENTER PROSPECTIVE STUDY

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Introduction

Trans-radial approach (TRA) is recommended by international guidelines to reduce vascular complications during percutaneous coronary procedures. However, crossover of vascular access after transradial puncture is required in 4-10% of cases according to different studies. Multiple clinical predictors are unanimously associated to transradial failure as older age, female sex and short height but there are conflicting data for other variables as a previous coronary procedure performed through the same vascular access. Moreover, clinical characteristics of patients with radial failure after multiple procedures are not well known. Aim of our study was to evaluate the characteristics of patients with transradial approach failure according to single or multiple transradial accesses.

Methods

All patients who underwent to percutaneous coronary diagnostic or interventional procedures in our Center has been prospectically included. Patients that necessitated of vascular crossover after TRA failure were analyzed and divided in two groups: patients "naïve" to previous procedures (Group 1) and patients with at least a previous diagnostic or interventional procedure through the radial access that required crossover (Group 2). All patients were checked 24-hour post procedure to perform wrist vessels ultrasound (US) and to evaluate possible vascular complications, radial occlusion and bleeding. US measurements were performed 1-3 cm proximal to the radial styloid process or the pisiform bone. Diameter, perimeter, area, intimal thickness and doppler parameters such as peak systolic velocity (PSV) and end-diastolic velocity (EDV) were measured.

Results

Between July 2022 and May 2024 a total of 2235 procedures has been performed through transradial access in our Center (1341 procedures in "naïve patients" and 894 procedures in patients with a previous vascular access). The global rate of transradial failure was 4.9 % (110 procedures): 84 patients (77%, 72±13 years) in Group 1 and 26 patients (23%, 67±10, p=0.11) in Group 2. Group 1 and Group2 did not differ for clinical and procedural characteristics as height, weight, blood pressure and PTCA rate, but female sex was more frequent in Group 1 (56%) compared to Group 2 (30%, p= 0.04). Comparing ultrasound data, radial area and PSV of the failed TRA were similar in Group 1 (area 0.07 ± 0.1 cm2; PSV 50.4 ± 40.8 cm/s) compared to Group 2 (area 0.06 ± 0.38 cm2, p= 0.37; PSV 49.8 ± 46.8 cm/s; p= 0.95). The rate of radial occlusion did not differ between Group 1 (7 cases, 8.3%) and Group 2 (2 cases, 7.7%, p= 1.0). Compared to patients without radial failure, the rate of previous multiple procedures was similar compared to Group 2 (25% vs 23% respectively, P= 0.75).

Conclusions

Patients with TRA failure after multiple vascular access showed similar clinical and echographic characteristics compare to patients with single vascular access and transradial failure. Most of TRA failure were associated with female sex in patients without previous procedures but not in patients with multiple vascular access.

CORONARY: PCI: LONG-TERM OUTCOMES

P12

STANDARDIZED HAEMOSTASIS PROTOCOL FOR RADIAL ARTERY PROCEDURES: PRELIMINARY RESULTS FROM SHARED-PCI

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Introduction

The radial hemostasis after the angiographic procedure has been improved from its introduction to the present time. Recently, the concept of "patent hemostasis" was introduced and widely applied to guarantee access reutilization in case of repeated interventional procedures. However, the incidence of radial artery occlusion (RAO) is not negligible, according to current literature (6-8%); furthermore, the hemostasis time guaranteeing the best balance between low RAO rate and bleeding incidence is yet debated, leading to huge heterogeneity between hemostasis protocols. The hemostasis devices utilization has helped vascular access management; nevertheless, their utilization is burdened by relevant nurse utilization, as per IFU indications. The current work presents the preliminary results of the "SHARED-PCI" hemostasis protocol for interventional coronary procedures.

Methods

The experimental hemostasis protocol was applied in all patients undergoing interventional procedures from the radial artery between January 2024 and June 2024. Both distal (DRA) and traditional radial artery (TRA) approaches were considered and included in the analysis. The protocol was structured as follows: after sheath removal, the TR Band device was positioned and inflated with 15 cc of air and maintained on-site for 2 hours (TRA) or 1,5 hours (DRA). A progressive air withdrawal was done in 5cc steps, until reaching effective hemostasis (for both protocols, within 3 hours). The RAO incidence was evaluated with a reverse Barbeau test. RAO incidence, the number of deflations, and heparin utilization were reported.

Results

128 consecutive patients were included, with a median age of 72 years (IQR 67-78) and a prevalence of men over women (79%). The DRA approach was used for 12% of procedures, whereas the 6F sheath was chosen for 93% of patients. Regardless of heparin administered for PCI (mean value 8855,5±3349 UI), the mean hemostasis time was 183,5±44 minutes with a 3,1±0,5 deflations needed to reach an effective hemostasis. After sheath removal, the RAO incidence was 2,3%. No significant difference for procedural and protocol characteristics was found between sex. Of note, in the DRA group, a lower heparin amount was administered (p=0.07) and a lower hemostasis time (p<0.05) than in the TRA group was required.

Conclusions

The choice of a standardized air volume withdrawal and timing could ensure effective hemostasis without an increase in clinically relevant bleeding (EASY scale <2). Furthermore, as widely demonstrated in current literature, a shorter hemostasis time is often associated with a high patency rate of radial artery and an uneventful post-procedural management. The different hemostasis time is related to different arterial sizes; indeed, a distal radial artery has a mean caliber of 0,5 mm lower than the proximal radial both in women and men. In conclusion, a protocol with few steps guarantees a lower assistance burden in case of limited nurse resources without impact on hemostasis efficacy.

OTHER

P13

SINGLE CORONARY ARTERY AND TAKOTSUBO SYNDROME

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Rational

Coronary artery anomalies (CAAs) include several congenital conditions characterized by abnormal origin or course of any of the 3 main epicardial coronary arteries. Because of the existence of many possible interindividual normal anatomic variants, the term CAAs has historically been restricted to those occurring in <1% of the general population 1. According to the literature, CAAs affect around 1% of the general population, ranging from 0.3%-5.6% in studies on patients undergoing coronary angiography, and in approximately 1% of routine autopsy. Although CAAs are relatively uncommon, they are the second most common cause of sudden cardiac death (SCD) among young athletes. The risk correlated with a CAAs usually depends on the location and course of the anomalous origin of a coronary artery (AOCA) [2]. Various diagnostic techniques can be used to investigate coronary anatomy and to assess the presence of high-risk features. Coronary computed tomography angiography (CCTA) is currently considered the gold standard, and cardiac magnetic resonance (CMR) is becoming an alternative [1]. CAAs may coexist with other cardiological conditions, including ischaemic heart disease or cardiomyopathies, such as Takotsubo syndrome. Takotsubo syndrome (TTS, or stress cardiomyopathy, is a reversible acute ventricle dysfunction, usually linked to a significant physical or emotional stressor [3]. It shares common features with acute coronary syndromes (ACS): similar symptoms, ECG abnormalities, elevated cardiac biomarkers and in-hospital mortality, but with normal or nearly normal coronary arteries at coronary angiography [4]. Although TTS is generally considered a benign condition, hemodynamic and electrical instability during the acute phase expose patient to the risk of serious adverse in-hospital events (QT prolongation ad ventricular arrhythmias, left ventricular outflow tract obstruction, cardiogenic shock, ventricular thrombus, pulmonary oedema, ventricular septal defect and free wall rupture) [5]. The diagnosis of TTS is often challenging because its clinical phenotype may closely resemble AMI regarding ECG abnormalities and biomarkers. Currently, coronary angiography with left ventriculography is considered the gold standard diagnostic tool. New international diagnostic criteria (InterTAK Diagnostic Criteria) have been developed to improve identification and stratification of TTS [4]. This case report represents an essential synthesis of these two clinical conditions. A 60-year-old female, former smoker, diabetic, dyslipidemic, affected by hypertension, presented to the emergency de-

partment after experiencing chest pain during memorial family ceremony. At the admission ECG showed sinus bradycardia with non-specific abnormalities of ventricular repolarization (QTc 432 msec) and hematochemical examinations documented positivity of indices of myocardiocytosis: Troponin I 4602 ng/ml (normal value <15,60 ng/ml); CK-MB 27,8 ng/ml (normal value <3,4 ng/ml) and Myoglobin 107 ng/ml (normal value <106 ng/ml). Transthoracic echocardiography showed mild decrease of global systolic function with apical akinesia and hyperkinesia of basal segments (EF 45%). She was admitted with diagnosis of NSTEMI to the coronary intensive care unit for close clinical-instrumental monitoring. Overnight, for persistence of chest pain despite nitrate therapy, she was brought to the cath lab and undergone to urgent invasive coronary angiography (ICA). During coronarographic study, due to the difficulty in channeling the left coronary artery, aortography was performed, which documented abnormal origin of circumflex artery and anterior descending artery from right sinus of Valsalva. The exam revealed coronary arteries free from hemodynamically significant lesions, so that ventriculography was performed with evidence of apical akinesia and basal hyperkinesis, compatible with Takotsubo syndrome. During hospitalization, patient underwent CCTA, which confirmed the common origin of left coronary artery from the right cusp and its retro-aortic course. Moreover, post-contrastographic sequences did not reveald frank areas of myocardial oedema. The subsequent clinical course was free from complications and major arrhythmic events on telemetric ECG monitoring. The patient was discharged at 6th day after optimization of medical therapy with introduction of Bisoprolol. At discharge, transthoracic echocardiography documented partial recovery of left ventricular function with evidence of apical cap akinesia (EF 45-50 %).

Technical resolution

The diagnosis of TTS is often challenging because its clinical resemblance to ACS. Cardiac magnetic resonance (MRI) is very useful during subacute phase to allow precise quantification of heart function and characterization of myocardial tissue (i.e. oedema, inflammation, necrosis/fibrosis). Adrenergic receptor tomoscintigraphy (I-MIBG) with positron emission tomography (PET) have been used in TTS for assessment of perfusion, metabolism and innervation, corroborating diagnosis [5]. Concerning CCAs, the diagnosis is most frequently an incidental finding during workup for ischemic heart disease. Invasive coronary angiography (ICA) is considered the most important and definite tool to identify and classify CAAs. However, because of its invasiveness, relatively low spatial resolution, and lack of 3-dimensional images, it has been progressively replaced by coronary computed tomography angiography (CCTA). In fact, it offers a detailed characterization of the anatomic clues associated with high-risk CAAs, it allows visualization of the surrounding cardiac and non-cardiac structures and of their relative 3-dimensional relations and it is more widely applicable for population studies [1]. In our clinical case MRI and I-MIBG were not performed, since patient refused them. However, the patient underwent CCTA, which confirmed the abnormal origin of left coronary artery from the right sinus Valsalva with a retro-aortic course. This is a very rare variant, with a reported prevalence of 0.02%-0.05% on angiographic studies [2]. Moreover, post-contrastographic sequences allowed to exclude the presence of frank areas of myocardial oedema, further corroborating the diagnosis of Takotsubo syndrome.

Clinical Implications

TTS represents almost 2% of patients presenting with suspected ACS and in 90% of cases it occurs in postmenopausal women. The pathophysiological mechanisms of TTS are incompletely understood, but there is considerable evidence that sympathetic hyperactivation during an extreme stress event is central to the pathogenesis of myocardial stunning [4]. Concerning CAAs, the risk usually depends on the location and course of the anomalous origin of a coronary artery. A coronary artery that arises from the contralateral sinus of Valsalva has five potential course patterns with different haemodynamic and prognostic significance: pre-pulmonic, retro-aortic, inter-arterial, trans-septal and retro-cardiac. Retro-aortic variant does not seem haemodynamically significant [2]. According to historical reports, both the right and left coronary arteries originating from the opposite sinus may be associated with an increased risk of SCD. Among 1866 sudden deaths that occurred in American athletes over a 27-year period, 119 (17%) were attributed to such CAAs, and left coronary artery originating from the right sinus of Valsalva was the most frequently involved, in particular when other high-risk features were present, such as: a slit-like ostium, an acute takeoff angle, and an inter-arterial course. Furthermore, because most of the available studies have focused on young individuals practicing strenuous exertion, it remains unclear whether these anomalies should be considered dangerous when documented in nonathletes or in the elderly [1]. Our clinical case documented a case of CCAs found as an incidental finding during diagnostic workup for TTS/ischemic heart disease. Performing a CCTA confirmed the presence of CCAs and described its retroaortic variant, which according to current data does not appear to be associated with hemodynamically significant effects.

Perspectives

As result of the complexity of TTS, Guidelines regarding management are lacking as no prospective randomized clinical trials have been performed in this patient population. Therapeutic strategies are therefore based on clinical experience and expert consensus (evidence level C). During the acute phase, since catecholamine levels are elevated in TTS, beta-blockers seem to be reasonable until full recovery of LVEF. Also, angiotensin-converting-enzyme inhibitors (ACEi) or angiotensin II receptor blockers (ARB) may potentially facilitate LV recovery. ACEi and ARB was associated with improved survival at 1-year follow-up even after propensity matching. In contrast, there was no evidence of any survival benefit for the use of beta-blockers [5]. Concerning CCAs, the prognostic consequences are extremely variable, and each therapeutic choice should be tailored to the patient's characteristics. Altought some anomalies should necessarily be considered malignant and need correction, the prognostic relevance of more common forms such as coronary arteries originating from the opposite aortic sinus remains uncertain [1]. According to the literature, the point of contact between these two conditions lies in the fact that coronary artery anomalies can provoke intermittent vasospasm and endothelial dysfunction, which can cause Takotsubo syndrome. However, in all cases of TTS with CCAs described, the akinetic myocardial territories presents a typical pattern (apical baloong), and these do not correlate with a specific epicardial coronary distribution territory [6]. Takotsubo syndrome represents an extremely heterogeneous pathological condition, influenced by complex etiopathogenesis, variety of triggers, and underlying clinical conditions of the patients, so that therapeutic strategies adopted are nebulous and follow-up poor. CCAs also represent an extremely heterogeneous condition whose prognosis depends on the anatomical variant and on the resulting hemodynamic impact. Prospective for the future could be to set up an international registry of patients with Takotsubo syndrome in whom coronary artery anomalies is documented, to establish the correlation between these two pathological conditions. In particular if CCAs could influence clinical manifestation (symptoms or ventricle dysfunction), prognosis and risk of recurrence of TTS. Moreover, further studies should be performed to clarify the etiopathogenetic mechanisms triggering Takotsubo syndrome in patients with CCAs.

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PERIPHERAL: ACUTE PULMONARY EMBOLISM

P14

TROMBECTOMIA MECCANICA PERCUTANEA IN UN CASO DI TROMBOEMBOLIA POLMONARE A RISCHIO INTERMEDIO-ALTO COMPLICATA DA TROMBOSI IN TRANSITO ATTRAVERSO IL FORAME OVALE

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Introduzione

La trombectomia meccanica percutanea per il trattamento della tromboembolia polmonare (TEP) è indicata nei pazienti con TEP ad alto rischio che presentano controindicazioni assolute alla trombolisi. Di recente lo studio FLARE che ha valutato l'efficacia e la sicurezza dell'utilizzo del sistema FlowTriever® in pazienti con TEP a rischio intermedio ha dimostrato un significativo miglioramento degli indici ventricolari destri, senza un significativo aumento delle complicanze emorragiche. Il nostro caso riguarda una donna di 69 anni affetta da obesità di grado severo accedeva presso il pronto soccorso di un ospedale spoke per dispnea ingravescente esordita 3 giorni prima. In anamnesi vi era storia di pregressa emorragia cerebrale, ipertensione arteriosa ed allergia ad enoxaparina. La pressione arteriosa era 100/60 mmHg. All'elettrocardiogramma vi era evidenza di tachicardia sinusale con pattern S1Q3T3.

All'emogas arterioso vi era evidenza di ipossia ed alcalosi respiratoria ed incremento dei lattati. Gli esami ematochimici mostravano un D-dimero di 2843 ng/ml. Veniva iniziata ossigenoterapia di supporto (cannule nasali 5 L/min). Nel sospetto di embolia polmonare veniva pratica angio-TC, che documentava TEP massiva bilaterale. La paziente veniva quindi ricoverata in UTIC e veniva iniziata terapia con eparina non frazionata in infusione continua. Veniva praticato ecocardiogramma con riscontro di dilatazione delle sezioni destre (RVD1 43 mm; RVD2 41 mm), bulging sinistro-convesso dei setti interatriale ed interventricolare, ridotta funzione contrattile del ventricolo destro (TAPSE 15 mm; RVs' 9 cm/s), segno di McConnell, insufficienza tricuspidalica severa da cui si stimava una PAPs di 70 mmHg. Si notava inoltre una formazione ipoecogena mobile in atrio destro, non meglio caratterizzabile per l'elevata impedenza acustica del torace. Veniva quindi eseguito ecocardiogramma trans-esofageo (ETE) che mostrava voluminosa formazione trombotica fusiforme in atrio destro che attraversava il forame ovale (PFO) proiettandosi in atrio sinistro. In considerazione dell'elevatissimo rischio embolico della lesione e della controindicazione assoluta alla trombolisi sistemica (pregressa emorragia cerebrale), la paziente veniva quindi trasferita presso l'UTIC del nostro Ospedale per valutazione per cardiochirurgia o tromboaspirazione percutanea della lesione. Nel frattempo, veniva proseguita l'infusione di eparina. All'arrivo veniva ripetuto ETE, che mostrava completa risoluzione della formazione trombotica a cavallo del PFO. La fossa ovale appariva aneurismatica con convessità sinistra ed il PFO risultava persistentemente pervio con shunt destro-sinistro continuo al color-Doppler. In considerazione dei segni di marcato sovraccarico del ventricolo destro, accompagnati anche da segni clinici di scompenso cardiaco destro (edemi declivi, iniziale ipertransaminasemia ed iperbilirubinemia con prolungamento spontaneo del PT-INR) veniva comunque programmato intervento di trombectomia meccanica percutanea.

Metodi

Il controllo angiografico con catetere pig-tail documentava subocclusione tromboembolica di entrambi i rami polmonari principali con multipli difetti di riempimento dei rami lobari; pertanto, su guida "extra-stiff" si procedeva al posizionamento del sistema FlowTriever® 24 Fr, effettuando multiple aspirazioni con rimozione di grosse quantità di materiale trombotico bilateralmente.

Risultati

Al termine della procedura si osservava netto miglioramento della funzionalità ventricolare destra (TAPSE 19 mm; RVs' 13 cm/s; PAPs 50 mmHg). Veniva quindi proseguita la terapia eparinica per ulteriori 24 ore e poi eseguito switch a terapia anticoagulante orale con Edoxaban 60 mg/die. Dopo 5 giorni di osservazione la paziente è stata dimessa in buone condizioni cliniche.

Conclusioni

La trombectomia meccanica polmonare trova attualmente indicazione in pazienti con TEP ad alto rischio e controindicazione alla terapia trombolitica o lì dove la terapia trombolitica è stata utilizzata ma risultata inefficace. Il nostro caso invece mostra il trattamento efficace di un caso di TEP a rischio intermedio-alto con elevato burden trombotico, come dimostrato dal trombo in transito attraverso il PFO, fortunatamente dissoltosi con la terapia eparinica prima di poter embolizzare. L'immediatezza di azione dell'approccio interventistico rispetto alla semplice terapia eparinica ha consentito un rapido miglioramento della funzione ventricolare destra e una pronta risoluzione del quadro di scompenso cardiaco destro acuto. In futuro, l'approccio con tromboaspirazione percutanea potrà trovare sempre più applicazione a scapito della trombolisi sistemica (nel caso della TEP con instabilità emodinamica) o della sola terapia anticoagulante (nel caso della TEP a rischio intermedio/alto) quando dati più robusti saranno disponibili.

PERIPHERAL: LOWER LIMBS

P15

DOUBLE STEP ILIAC AND FEMORO POPLITEAL RECANALIZATION + BELOW THE KNEE ANGIOPLASTY: A CASE OF EXTREME LIMB SALVAGE

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Razionale

L'ischemia critica dell'arto inferiore è uno degli eventi clinici gravati dalla più elevata mortalità e morbidità. La possibilità di gestire per via totalmente percutanea tale patologia con salvataggio dell'arto dall'amputazione è uno degli ambiti più challenging dell'interventistica endovascolare.

Risoluzione Tecnica

Presentiamo il caso di un paziente con ischemia critica dell'arto inferiore e complessa patologia ostruttiva dell'arto con occlusione dell'asse iliaco, dell'asse femoro-popliteo e severa patologia obliterante del distretto sottogenicolato. Il caso era ulteriormente complicato dalla contestuale vasculopatia dell'arto superiore sinistro, nonchè dai deficit posturali che rendevano pressocchè impossibile il mantenimento sul tavolo angiografico di una postura compatibile con la procedura interventistica. Questo ha richiesto un approccio multi-step con pianificazione della strategia di trattamento e delle eventuali modalità di recupero in bail-out. Si è resa inoltre necessaria l'assistenza anestesiologica per superare gli ostacoli posturali.

Implicazioni cliniche

Il trattamento double-step dell'occlusione dell'asse iliaco e successivamente (a fronte della verifica di un mancato miglioramento delle condizioni cliniche del paziente) dell'occlusione dell'asse femoro-popliteo con recupero del distretto sottogenicolato e della vascolarizzazione arteriosa dell'estremità ha portato ad un completo recupero della circolazione arteriosa dell'arto trattato con risoluzione dell'ischemia critica.

Prospettive

L'ischemia critica dell'arto inferiore (piede diabetico) è uno dei setting più complicati di intervento e richiede la necessità di una valutazione complessa della modalità di trattamento (accessi vascolari, distretti da trattare, strategie di trattamento).

STRUCTURAL: HEART DISEASE: GENERAL

P16

RIGHT HEART CATHETERIZATION FROM UPPER ARM SUPERFICIAL VEIN: TOOLKIT AND SINGLE CENTER EXPERIENCE.

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Introduzione

Il cateterismo cardiaco destro (RHC) è uno strumento di estrema utilità per approfondire le condizioni emodinamiche in diversi scenari. Sebbene nel corso degli ultimi anni il ricorso alla metodica si è ridotto, ancora oggi alcune patologie meritano un approfondimento invasivo con RHC (sospetto shunt, valvulopatie complicate da ipertensione polmonare, insufficienza cardiaca avanzata). Una delle maggiori limitazioni all'uso del RHC è sicuramente il rischio di complicanze, sia infettive ma soprattutto legate all'accesso vascolare.

Metodi

Una opzione alternativa all'accesso venoso giugulare/ succlavio/ femorale è l'accesso venoso antecubitale (preferibilmente destro) per minimizzare i rischi di complicanze e consentire al paziente minore discomfort e deambulazione precoce. La procedura si basa sulla tecnica di Seldinger. Un accesso venoso periferico di 18G (CVP codificato col colore verde) viene posizionato su campo sterile dal personale infermieristico. Una guida 0.35 inserita all'interno del CVP viene avanzata sotto guida fluoroscopica sino all'atrio destro o vena cava inferiore. Sulla 0.035'' viene inserito un introduttore 7F, su un catetere diagnostico 5/6F viene scambiata la 0.035'' con la 0.025'' del catetere di Swan-Ganz (SG). Lo stesso catetere destro o lo SG consentiranno di raggiungere sempre sotto guida fluoroscopica l'arteria polmonare (Figura1). La corretta posizione viene quindi confermata rimuovendo la guida dal lume e controllando la curva di pressione. Al termine il catetere di SG e l'introduttore vengono rimossi e l'emostasi si ottiene per compressione 5 minuti + fasciatura compressiva (Figura 2).

Figura 1

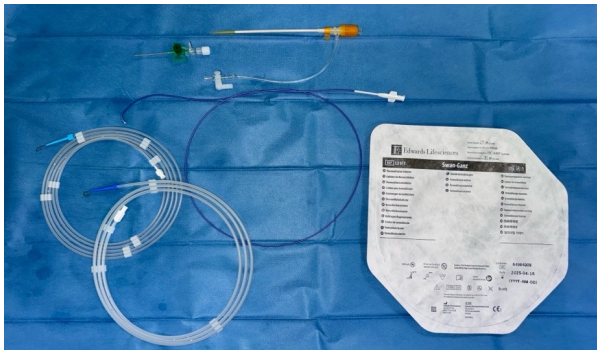
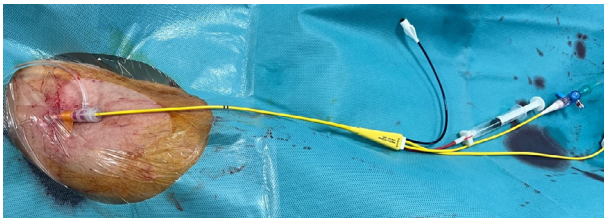


Figura 2



Risultati
Nell'ultimo anno 35 RHC sono stati eseguiti presso il nostro Laboratorio di Emodinamica, di cui 26 (74%) con questo accesso; i restanti erano: accesso venoso femorale (n=8) e accesso venoso giugulare (n=1). L'indicazione al RHC era: valutazione delle pressioni polmonari e gittata in pazienti da sottoporre a cardiochirurgia per malattia valvolare e/o cardiomiopatia ipertrofica ostruttiva (n= 14), insufficienza tricuspidalica severa candidati a TEER (n=9), insufficienza cardiaca avanzata per valutazione terapie non convenzionali (n=3).
Nessuna complicanza maggiore si è verificata. Nei pazienti in cui non è stato possibile accesso brachiale la causa è stata: irreperibilità venosa (n=7), occlusione asse venoso in portatore di ICD a destra (n=1), presenza di fistola arterovenosa da emodialisi (n=1). In tutti i pazienti in cui è stato possibile posizionare CVP è stato anche possibile completare il cateterismo dall'accesso tranne 1 (per occlusione asse venoso); in 2 pazienti in cui non si è riusciti a posizionare CVP la puntura della vena antecubitale è stata fatta sotto guida ecografica con ago 18G e guida 0.035''. Un solo paziente ha sviluppato ematoma non rifornito dell'accesso. Il tempo medio dall'ingresso in sala all'inizio del cateterismo è stato di circa 15 minuti.
Conclusioni
Il cateterismo destro può essere effettuato con elevata percentuale di successo e sicurezza dall'accesso venoso antecubitale destro. Sebbene il tempo richiesto per la procedura sia leggermente maggiore rispetto all'accesso venoso femorale o giugulare, il rischio di complicanze è minimo e rispetto all'accesso venoso femorale l'angolo di ingresso nelle sezioni destre del catetere di SG è anche più favorevole.

STRUCTURAL HEART DISEASE: LAAO

P17

ONE-YEAR CLINICAL AND TRANSESOPHAGEAL ECHOCARDIOGRAPHIC OUTCOMES AFTER LEFT ATRIAL APPENDAGE CLOSURE.
Tiziana Salatino[1], Anna Silvia Ghini[1], Roberto Celotto[2], Stefano Migliaro[2], Francesca Lassandro Pepe[1], Alessandro Petrolini[1], Natale Di Belardino[3], Fabrizio Tomai[1]
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Introduction
Percutaneous left atrial appendage (LAA) closure has been shown to be a suitable alternative to medical therapy for patients with non valvular atrial fibrillation (AF) who cannot tolerate long-term oral anticoagulation (OAC). This study was aimed at assessing 1-year clinical and transesophageal echocardiographic (TEE) outcomes in a consecutive series of patients undergoing LAA closure with a single-seal (Watchman first generation or Watchman FLX, Boston Scientific, Boston, MA, USA) or dual-seal device (Amplatzer Amulet, Abbott, IL, USA).
Methods
Between January 2021 and January 2023 we prospectively enrolled 47 patients (77±10 years, 17 female), with paroxysmal (N=3, 6%), persistent (N=32, 68%) or permanent (N=12, 26%) non valvular AF, a CHA_2DS_2-VASc score of 3±1.1 and a HAS-BLED score of 3±1, not eligible for long-term OAC. Indications for LAA closure were stroke/TIA in 15, major bleeding in 36, malignancy in 8 and chronic kidney disease in 2 patients, respectively.
Results
Procedural characteristics and TEE findings are reported in the **Table**.
LAA closure was successfully performed in all patients, without complications. Only one peri-device leak <3 mm was detected by TEE at the end of the procedure. All patients were discharged in dual anti-plateled therapy for 3 or 6 months on the basis of the hemorrhagic risk, followed by single anti-plateled therapy (SAPT).

Table. Procedural Characteristics and TEE findings

Procedure	
Watchman, n (%)	36 (77%)
Amulet, n (%)	11 (23%)
Device recaptures per patient	1.2±1
Procedural time (min)	65±23
Contrast volume (mL)	71±54
CHA_2DS_2-VASC score	3 ± 1.1
HAS BLED score	3 ± 1
Post-procedure TEE findings	
Peri-device leak <3mm (n, %)	1 (2%)
Peri-device leak ≥3mm (n, %)	0
Device-related thrombosis (n, %)	0
1-year TEE findings	
Peri-device leak <3mm (n, %)	1 (2%)
Peri-device leak ≥3mm (n, %)	0
Device-related thrombosis (n, %)	2 (4%)

At 1-year follow-up, no patient reported clinical events. At 1-year TEE, 1 patient exhibited a peri-device leak <3 mm (already present at the end of the procedure), without any clinical event. Two patients exhibited device-related thrombosis (1 Watchman and 1 Amulet) (**Figure**). They were on SAPT and had permanent AF, large LAA (43 ml/m^2 and 51 ml/m^2, respectively), high CHA_2DS_2-VASc score (4 and 5, respectively) and, in one case, moderate mitral stenosis. These patients underwent long-term imaging surveillance.
Conclusions
LAA closure is a safe and effective procedure with remarkable success rates for patients with AF unsuitable for long-term OAC. However, despite of a successful procedure without any clinical complication and the absence of significant residual peri-device leaks, device-related thrombosis may occur, thus making mandatory a follow-up with TEE imaging at 6 or 12 months. Optimal antithrombotic regimen after LAA closure and the management of complications remain to be addressed.

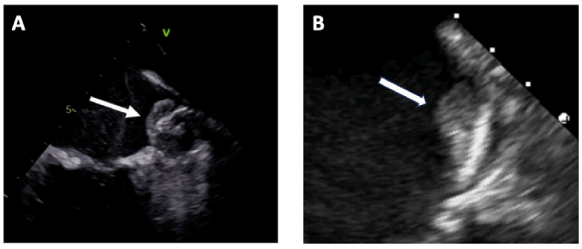

Figure. Device-related thrombosis (arrow) on a single-seal (**A**) and on a dual-seal (**B**) occlusive device

P18

INTRACARDIAC ECHOCARDIOGRAPHIC PROBE USED VIA TRANSESOPHAGEAL TO GUIDE LEFT ATRIAL APPENDAGE OCCLUSION: THE DIONISIO STUDY
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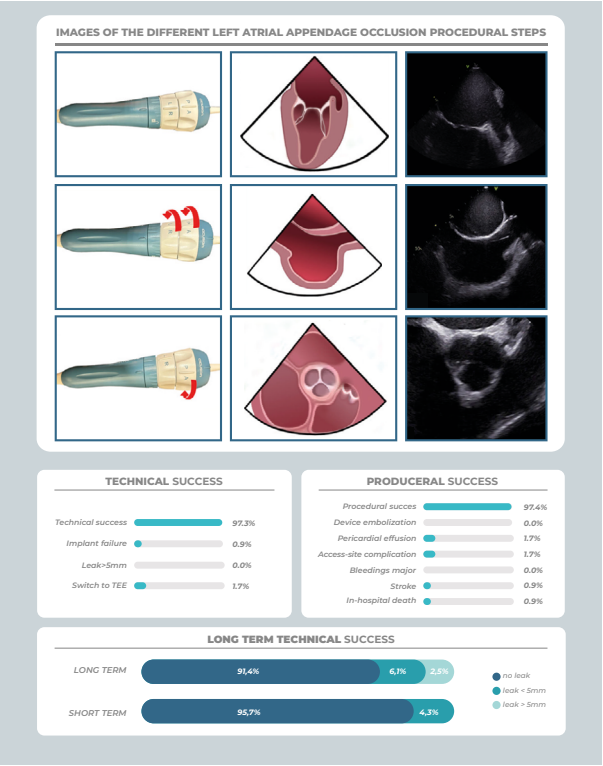
Objectives
This study sought to evaluate the feasibility, safety, and efficacy of the intracardiac echocardiography (ICE) probe via the esophageal route (TE-ICE) to guide left atrial appendage occlusion (LAAO).
Background
Intraprocedural imaging guidance is recommended for all LAAO procedures. Currently, both femoral-ICE-guided and TEE-guided LAAO demonstrate similar outcomes. TE-ICE may serve as a potential alternative imaging modality in LAAO.
Methods
The intracardiac echocardiographic probe used via transesophageal to guide left atrial appendage occlusion (DIONISO) Study is a prospective, single-arm study, which aimed to assess the safety and efficacy of LAAO using TE-ICE to guide the procedure. Technical success, procedural success and long technical success were the main outcomes of the study.
Results
From January 2023 to January 2024, a total of 114 patients (mean age 76.2 ± 9.2 years) with a mean CHA2DS2-VASc score of 5.9 ± 1.6 and HAS-BLED score of 3.6 ± 1.2 were enrolled in the study. History of bleeding was the most common indication for LAAO (37.7%). Esophageal intubation with ICE was performed and well tolerated without anesthesia by all patients. The technical success (feasibility endpoint) was achieved in 98.2% of patients; in two cases, a switch to standard TEE was necessary. Procedural success was obtained in 97.4% of patients: two (1.7%) patients experienced pericardial effusion requiring drainage, and one patient died. A total of 80 (70%) patients underwent TEE at a median follow-up of 85.3 ± 46.7 days. A peridevice residual leak > 5 mm was reported in 2 patients (2.5%).
Conclusions
The DIONISO Study was the first to assess the role of TE-ICE-guided LAAO. It demonstrated a high procedural success rate, few complications, and effective LAAO. These results suggest that TE-ICE could serve as a valid alternative to TEE for guiding LAAO procedures, thus avoiding the need for general anesthesia. However, further extensive studies are required to validate this technique thoroughly.

FIGURE IntracarDIac echOcardiographic probe used via traNsesophageal to guIde left atrial appendage occluSIOn: **DIONISIO** *registry* (n=114)



STRUCTURAL HEART DISEASE: MITRAL INTERVENTIONS

P19

TRANS-SEPTAL VERSUS TRANS-APICAL VERSUS SURGICAL LEFT-ATRIAL ACCESS FOR TRANSCATHETER MITRAL VALVE REPLACEMENT USING THE EDWARD SAPIEN ULTRA AORTIC BALLOON-EXPANDABLE VALVE

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Introduction

The risk of repeat mitral valve surgery is high. Similarly, patients with severe mitral annular calcification (MAC) have high surgical risk, due to multiple comorbidities usually present and technical challenges related to calcium. Transcatheter mitral valve replacement (TMVR) utilizing aortic balloon-expandable transcatheter heart valves represent a valid option for the treatment of patients with failed surgical bioprostheses (MViV), failed repairs with surgical rings (MViR) or severe MAC (ViMAC) who are not candidates for surgery. However, it still unclear and not adequately addressed the optimal access route in these patients. Thus, we report early and 1-year outcome of a series of consecutive patients undergoing TMVR using different access routes.

Methods

We prospectively enrolled 14 patients (60±14 years) undergoing elective TMVR using an Edward Sapien Ultra valve. Nine patients had a failed surgical bioprosthesis and 5 a severe MAC. According to the Heart Team decisions, the access route was trans-septal in 4 patients, trans-apical in 5 and surgical left-atrial in 5, respectively.

Results

The average surgical risk, assessed by STS score and EuroSCORE II, was 5.2±2.6 and 9.4±5.7, respectively, without any difference among the 3 groups. All patients exhibited a NYHA functional class ≥3. Procedural characteristics and clinical outcomes are reported in the **Table**.

Conclusions

TMVR using aortic balloon-expandable transcatheter heart valves represents a valid option for the treatment of patients at high risk of repeat mitral valve surgery or with severe MAC. It is still unclear, however, the optimal access route for this procedure and randomized clinical studies are lacking. Our study showing good results with the trans-septal access need to be confirmed in larger patient population.

Table. Procedural Characteristics and Clinical Outcomes

Procedure	Tran-septal	Trans-apical	Surgical
MviV, n	4	5	0
MviR, n	0	0	0
ViMAC, n	0	0	5
Transcatheter heart valve diameter (mm)	26 ± 3	26 ± 3	29±3
Device success, n (%)	4 (100)	5 (100)	5 (100)
Residual mean mitral valve gradient (mmHg)	5.5 ± 0.5	5 ± 0.5	5 ± 0.2
Residual mitral regurgitation >2+, (n)	0	0	0
Vascular complication, n	0	0	1
Mortality (n)	0	0	0
In-hospital complications			
Mortality (n)	0	2	2
Any stroke/TIA (n)	0	0	0
New permanent pacemaker requirement (n)	0	0	0
1-year clinical outcome and echo findings			
Mortality (n, %)	0	1	1
NYHA functional class I-II (n)	4	2	2
Valve thrombosis/dysfunction (n)	0	0	0
Mean mitral valve gradient (n)	5.5 ± 0.5	5.5 ± 0.5	5 ± 0.0
Total mitral regurgitation>2+ (n)	1	0	0

STRUCTURAL HEART DISEASE: PFO CLOSURE

P20

15-YEARS OUTCOMES OF PFO CLOSURE FROM A LARGE NATIONAL COHORT: INSIGHTS FROM THE ITALIAN PROLONG REGISTRY

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Introduction

Despite the rising employment of transcatheter device closure for Patent Fossa Ovalis (PFO) in prevention of cryptogenic stroke or Transient Ischemic Attack (TIA), limited data exist on its long-term outcomes. Given this context, the aim of the present national registry is to shed light on the long-term (>15 years) clinical outcomes of patients who have undergone PFO closure.

Methods

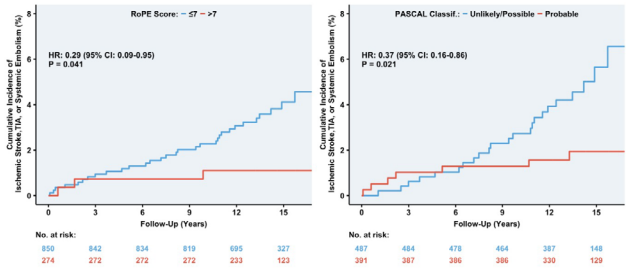
We conducted a multi-center retrospective cohort study, enrolling consecutive adult patients who underwent PFO device closure from 1999 to 2013 form the **PROLONG** (**P**FO t**R**anscatether **O**cclusion **L**ong-term **O**utcomes **N**ational **G**roup) registry, involving 12 tertiary centers in Italy. We collected demographic, clinical, procedural, and follow-up data from electronic health records and telephone interviews.

Results

We included 1245 patients (mean age 47±12 years; 56% female) with a mean follow-up (FU) duration of 14.6±2.4 years. The primary indication for PFO closure was cryptogenic embolism (stroke: 36%, TIA: 53%, systemic embolism [SE]: 1.9%), followed by silent lesions at brain MRI (9.7%). Successful device implantation was achieved in 99.1% of cases, with Amplatzer (78.8%) being the most used device. The procedural complication rate was 3%, with atrial fibrillation (AF) being the most common (2.2%). No procedure-related deaths occurred. Residual shunt was observed in 12.7% of patients, mostly mild (11%). A total of 34 patients (2.7%) had at least 1 recurrent event (stroke, TIA, or SE) (0.19 per 100 person-years). The predictors of recurrent event were the RoPE score (HR 0.78, 95% CI 0.65-0.95), the PASCAL classification (HR 0.3, 95% CI 0.16-0.86) and new-onset AF (HR 4.21 95% CI 1.63-10.9). The presence of a residual shunt did not predict recurrent events. 4.2% of patients developed new-onset AF during follow-up, with 0.7% occurring within six months post-procedure. There were 3 cases of late device thrombosis and 2 cases of late device dislocation.

Conclusions

Transcatheter PFO closure is an effective strategy with high success rates, low complications, and favorable long-term outcomes for the prevention of recurrent embolic events. Our findings underscore the importance of patient selection using scoring systems that identify a high causal probability between the PFO and the primary event.



STRUCTURAL HEART DISEASE: TAVI

P21

TRANSCATHETER AORTIC VALVE IMPLANTATION AND PERMANENT PACE MAKER. WHAT CORRELATION IN THE SHORT AND LONG TERM .

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Introduction

Transcatheter Aortic Valve Implantation (TAVI) becomes an increasingly widespread practice but conduction disturbances following TAVI and resulting in Permanent Pacemaker Implantation (PPI) remain a clinical problem. In this context, the aim of the study was to assess short and long-term outcomes of patients undergoing PPI after TAVI, and to analyze their pacing burden.

Methods

308 patients with severe symptomatic aortic valve stenosis undergoing TAVI (from January 2017 to February 2024) were retrospectively evaluated. Forty-eight patients were excluded due to having a previously implanted pacemaker. The final cohort of 260 patients was divided in two groups: 63 patients received a permanent pacemaker after TAVI, 197 did not receive it. Among these groups, anthropometric, clinical, echocardiographic, procedural, survival and rehospitalization data were collected to conduct the first step of study: evaluating all-cause mortality and rehospitalization of PPI-post-TAVI patients. The second step of the study was to analyze ventricular stimulation among patients that implanted a pacemaker after TAVI for new onset persistent Left Bundle Branch Block (NOP-LBBB) versus advanced atrio-ventricular block (AAVB): 44 patients completed the follow-up at 1 month and 1 year.

Results

There was no significant difference in both mortality and rehospitalization between the PPI-post-TAVI group and the no-PPI-post-TAVI one (p=0,504 and 0,788 respectively). Self-expandable valves were markedly more associated with conduction disturbances and permanent pacemaker implantation after TAVI (OR: 2.591; 95% CI: 1.420 - 4.717; p=0,002). Moreover, valve dimension was significantly associated with PPI (p<0,001). Patients that were implanted with a pacemaker had longer hospital stay (average days: 9,5 vs 7,6; p=0,001).

Analyzing device interrogation data, it emerged that patients implanting a pacemaker after TAVI for NOP-LBBB reduce their median pacing by 77% (p=0.04) in the first year, while those that implant for AAVB reduce their median pacing by 8,5% (p=0.53).

Conclusions

Permanent Pacemaker Implantation after TAVI did not result in increased mortality or rehospitalization, but it resulted in longer hospital stay. Ventricular pacing during the first year after the procedure reduces more in patients that had PPI for a NOP-LBBB compared to those that received it for AAVB.

P22

IL RAPPORTO TRA GRASSO VISCERALE E SOTTOCUTANEO PREDICE LA MORTALITÀ IN PAZIENTI TRATTATI CON TAVI

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Introduzione

La sarcopenia si è rivelata un promettente stratificatore prognostico nei pazienti sottoposti a intervento di impianto valvolare aortico transcatetere (TAVI). Diversamente, sono ancora pochi i dati sull'impatto del grasso viscerale (VAT), tessuto metabolicamente attivo associato ad esito cardiovascolare sfavorevole, e del grasso sottocutaneo (SAT), associato invece ad una prognosi favorevole in diversi contesti clinici. Pertanto, il presente studio ha voluto indagare la correlazione tra il rapporto tra grasso viscerale e sottocutaneo (VAT/SAT) in pazienti candidati a TAVI e la mortalità per tutte le cause a 30 giorni ed a 1 anno.

Metodi

Sono stati prospetticamente raccolti dati anamnestici e clinici di 168 pazienti consecutivi (42.5% maschi) sottoposti a TAVI tra il 2010 ed il 2022. Attraverso l'analisi retrospettiva della composizione corporea, utilizzando le immagini preoperatorie di tomografia computerizzata a livello della terza vertebra lombare (Fig.1), è stato calcolato il rapporto VAT/SAT. Il campione è stato suddiviso in due gruppi in base ai valori di VAT/SAT: High VAT/SAT (4° quartile) e Low VAT/SAT (altri 3 quartili). Il confronto tra i due gruppi è stato effettuato mediante test di Mann-Whitney per le variabili continue (espresse come mediana con 25°p-75°p), e tavole di contingenza e test del Chi-quadro per quelle ordinali e categoriche (espresse come percentuali). Le analisi di mortalità sono state eseguite attraverso curve di Kaplan-Meier con test del rango logaritmico e regressioni di Cox.

Risultati

La mediana di VAT/SAT era 0.89 [0.49-1.41]. Nel gruppo di pazienti con High VAT/SAT erano più frequenti tabagismo (45.9% vs 21.4%, p=0.04) e pregresso infarto miocardico acuto (35.1% vs 16.1%, p=0.013). Non si sono osservate differenze in termini di età, classe NYHA preoperatoria >2, incidenza di FA, DM, BPCO, IRC avanzata, pregresso ICTUS, pregressa rivascolarizzazione miocardica chirurgica. STS mortality score ed Euroscore II non differivano significativamente tra i due gruppi. La mortalità globale a 30 giorni ed a 1 anno è stata rispettivamente del 4.8% e del 15.6%. Come mostrato in Fig.2, il gruppo High VAT/SAT ha mostrato una mortalità ad 1 anno più elevata (27.8% vs. 11.6%, HR=2.9, p=0.022); non si sono rilevate differenze significative nella mortalità a 30 giorni (2.7% vs. 5.4%, p=0.508). L'analisi multivariata ha confermato High VAT/SAT quale predittore indipendente di mortalità (HR 2.6, IC 95% 1.1-3.1, p=0.024), includendo nel modello STS mortality score ed Euroscore II.

Conclusioni

Nei pazienti sottoposti a TAVI, elevati livelli di VAT/SAT sono associati in modo indipendente ad un rischio 3 volte maggiore di mortalità a 1 anno, senza avere un impatto significativo sulla mortalità a breve termine. L'aggiunta di VAT/SAT agli score attualmente in uso nella pratica clinica potrebbe ottimizzare la stratificazione preoperatoria del rischio in questo gruppo di pazienti.

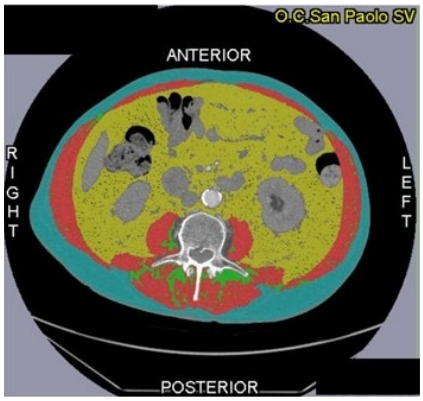

Figura 1. Analisi della composizione corporea effettuata mediante tomografia computerizzata a livello della terza vertebra lombare. Area gialla: grasso viscerale; area verde: grasso intra-muscolare; area azzurra: grasso sottocutaneo; area rossa: muscolo scheletrico.

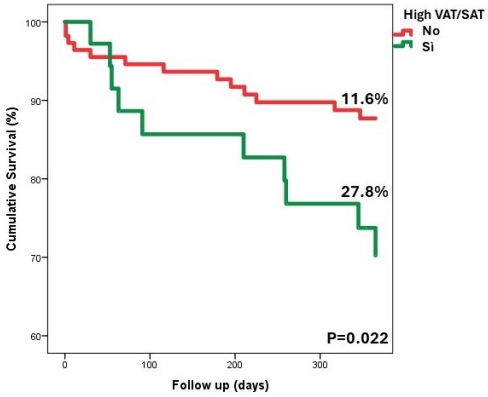

Figura 2. Mortalità a 1 anno nei pazienti dello studio suddivisi in base al valore di VAT/SAT.

P23

DEVELOPMENT AND VALIDATION OF A PREDICTIVE RISK MODEL FOR NEW PERMANENT PACEMAKER AFTER TRANSCATHETER AORTIC VALVE IMPLANTATION: THE RITMO SCORE

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Introduction

Despite a progressive decline, permanent pacemaker implantation (PPMI) remains one of the most common complications among patients undergoing transcatheter aortic valve implantation (TAVI), especially when using self-expanding (SE) platforms. The aim of the present study is to develop a simple and effective risk prediction model for PPMI within 30 days of TAVI.

Methods

Data from patients who underwent TAVI with a SE valve at our center between February 2015 and June 2022 were retrospectively collected. Baseline anatomical and electrocardiographic data, including the estimation of aortic calcium load (ACL) using either the Agatston score or the calcium volume, were used to build a predictive risk model for PPMI.

Results

Out of the 371 patients included in the analysis, 73 (19.7%) underwent PPMI within 30 days. Pre-procedural right bundle branch block (RBBB), membranous septum length (MSL) <5 mm, and severe ACL were significant predictors of PPMI. The model based on the Agatston method for ACL estimation showed better discrimination ability over the calcium volume-based one (K=0.89; 95% CI: 0.84 – 0.93 vs. K=0.71; 95% CI: 0.64 – 0.79, respectively). According to these results, the RITMO (RIsk model for new permanent pacemaker after Transcatheter aortic valve iMplantatiOn) score was created combining pre-existing RBBB, MSL, and Agatston score (range from -1 to 4 points). The score demonstrated good discrimination power, with a 30-day PPMI risk estimated in a range between 88% and 2% when the score was the highest and the lowest, respectively.

Conclusions

The RITMO score represents a simple tool for risk stratification in patients undergoing TAVI with a SE valve. Its role in clinical practice might be useful to identify a subset of patients at higher risk of 30-day PPMI and to improve periprocedural care and patient counseling.

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THE "ROUND TRIP TAVI". A COLLABORATION PROTOCOL BETWEEN HUB AND SPOKE CENTERS IN THE MANAGEMENT OF TAVI PROCEDURES

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Introduction

Aortic stenosis (AS) is the most common primary valve disease requiring intervention in Western Countries (including Italy), and its incidence is growing due to the aging population. Current European Guidelines recommend Transcatheter Aortic Valve Implantation (TAVI) as the preferred intervention for older patients or for those with increased surgical risk, although it can be performed only in Heart Valve Centers (HVC) with Cardiac Surgery Unit onsite. For this reason, HVCs must deal with many requests for this procedure, and in several region of Italy they are unable to satisfy them all and the waiting lists are considerably longer, exposing patients with AS to adverse events while they are waiting. To face this problem, in our Center (Rovigo Hospital), we started a collaboration with our reference HVC (Verona University Hospital), according to the so-called "*round trip TAVI*" protocol. The aim of the present study is to show the technical and clinical results of TAVI procedures performed with this new concept collaboration between Hub and Spoke Centers.

Methods

This is a multicentric retrospective observational descriptive study performed to evaluate the technical and clinical outcomes of patients undergoing TAVI with the "*round trip TAVI*" protocol.

The protocol is as follows:

- patient transfer by ambulance from Rovigo Hospital to the CathLab of the University Hospital in Verona; the transport is carried out by the Interventional Cardiologist and the Nurse from the Rovigo CathLab together with a Nurse specialized in emergency territorial transport and the driver;
- TAVI procedure performed by the Interventional Cardiologist and Nurse from Rovigo with the support and coordination of the CathLab Team of the Verona HVC;
- patient monitoring and observation for a few hours after the procedure and then transfer back to Rovigo Hospital for the remaining hospital stay;
- if during the procedure or in the post-procedural period adverse events occur that do not allow transport to Rovigo, the patient is hospitalized at the Cardiology Unit of Verona University Hospital.

Patients were consecutively enrolled between October 2023 and June 2024 by Interventional Cardiology Unit of Rovigo Hospital. The primary endpoint was the Early Safety (at 30 days) composite endpoint defined by the Valve Academic Research Consortium-3 (VARC-3) classification.

The secondary endpoints were the Technical Success (at exit from procedure room) and the Device Success (at 30 days) composite endpoints defined by the Valve Academic Research Consortium-3 (VARC-3) classification.

Results

We enrolled 36 patients, and the 30-days follow-up was available for 29 (80,6%) patients while 7 patients have not attended the follow-up visit yet. The primary endpoint (VARC-3 Early Safety) occurred in 23 (79,3%) patients. In particular, death within 30 days occurred in 1 (3,4%) patient. About the secondary endpoints, VARC-3 Technical Success was observed in 34 (94,4%) patients, while VARC-3 Device Success was observed in 27 (93,1%) patients. Among these, 4 (11,1%) patients suffered from in-hospital major bleedings, while 2 (5,6%) patients suffered from in-hospital major vascular complication. However, no one underwent vascular or cardiac surgery because of complication related to the device or the procedure.

Conclusion

Our data suggest that this collaborative protocol between Hub and Spoke Centers in the management of patients undergoing TAVI is simple, safe and effective. Since the patients are admitted to the Spoke Center and, therefore, their hospitalizations (pre- and post-TAVI) does not burden the Hub Centre, dedicated TAVI sessions allow to lighten the waiting lists and, furthermore, to train the Interventional Cardiologists for this type of procedure. Moreover, recent Trials have shown that TAVI is a safe and effective procedure even for younger patients with low surgical risk, therefore the overbooking problem for this procedure in Hub Centers will get worse, at least until Cardiac Surgery standby is necessary. For this reason, a protocol like the one we propose is essential to improve the health-care system and to ensure appropriate access to adequate care for all patients with AS who require TAVI.

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IMPIANTO DI VALVOLA AORTICA MEDIANTE ACCESSO TRANS ASCELLARE PERCUTANEO: ESPERIENZA DI UN SINGOLO CENTRO

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Introduzione

L'accesso trans femorale è attualmente quello più communente utilizzato nelle procedure di sostituzione valvolare aortica per via percutanea (TAVR). In una piccola percentuale di casi, l'approccio trans femorale non è utilizzabile, in massima parte a causa di dimensioni ridotte, calcificazioni o tortuosità degli assi femoro-iliaci.

L'approccio trans ascellare è stato uno di primo accessi "alternativi" utilizzati in caso di impossibilità di utilizzo dell'accesso femorale. Tradizionalmente l'utilizzo di questo accesso prevedeva un isolamento chirurgico dell'arteria me recentemente un approccio percutaneo "puro" è stato descritto.

Metodi

L'obiettivo del seguente studio è quello di valutare l'incidenza e le caratteristiche clinico-procedurali di pazienti sottoposti a procedura di TAVR mediante accesso percutaneo trans ascellare in un centro ad alto volume di impianti.

Sono stati analizzati i dati di tutte le procedure eseguite presso il nostro centro analizzate caratteristiche cliniche e procedurali. E' stato inoltre raccolto un follow up a medio termine per valutare l'outcome clinico dei pazienti.

Risultati

Tra maggio 2023 e giugno 2024 sono stai eseguite presso il nostro centro 183 procedure di TAVR. In 176 casi l'accesso scelto è stato quello trans femorale. In 6 casi è stato eseguito approccio trans ascellare percutaneao puro.

L'età media dei pazienti sottoposti a tali procedure è stato di 79 anni. Due pazienti erano diabetici e due pazienti avevano insufficienza renale grave (gfr <30ml/min). Tutti i pazienti non avevano accessi femorali utilizzabili a causa di una grave atemasiab obliterante dell'asse iliaco femorale. La scelta dell'approccio transascellare è stata eseguita dopo esecuzione di TC. In 5 casi è stata utilizzata l'ascellare di sinistra. In un solo caso, la presenza di arteria mammaria sinistra anastomizzata sull'arteria discendente anteriore, ha fatto in modo che fosse selezionato come accesso di lavoro quello ascellare destro.

In tutti i casi l'impianto di una protesi valvolare aortica autoespandibile è stata eseguita con successo. Tutte le procedure sono state portate a termine con successo e nessuno dei pazienti ha manifestato complicanza intraprocedurali. L'emostasi dell'accesso è stata eseguita in 4 casi (60%) con l'utilizzo di un solo sistema di chiusura mediato da sutura. In un caso è stato utilizzato un sistema di chiusura mediato da sutura ed un sistema con spugna di collagene. Un paziente infine è stato trattato con impian-

to di uno stent ricoperto a causa del fallimento del sistema di chiusura scelto. Nessuno dei pazienti ha mostrato complicanze emorragiche clinicamente rilevanti. La durata media della degenza è stata di 12 giorni. Ad un follow up medio di 6 mesi, nessuno dei pazienti ha manifestato morte cardiaca, ictus o altri venti cardiovascolari. Si è tuttavia registrato un decesso imputabile a cause non cardiovascolari (polmonite).

Conclusioni

L'approccio trans ascellare percutaneo (senza esposizione chirurgica) si è mostrato, in pazienti con controindicazione assoluta all'utilizzo di accesso femorale, efficace e sicuro. Ad un follow up medio di 6 mesi si è manifestato un evento maggiore legato ad un decesso per causa non cardiache.