ABSTRACTS
NVVC Najaarscongres
Donderdag 5 november
09.00 – 10.30 uur

SESSIE 5: Acute cardiology & Coronairy Artery Disease

	Zaal: 14	Voorzitters: drs. Casper Eurlings, cardioloog Laurentius Ziekenhuis Roermond dr. Jeroen Vendrik, AIOS Amsterdam UMC
1	09.00 - 09.10	**Safety of Very Early Discharge (<48 Hours) After Primary Percutaneous Coronary Intervention in Patients With ST-Segment Elevation Myocardial Infarction: A Systematic Review and Meta-Analysis** *De heer Rik Dijkman, Radboud UMC, Nijmegen*
2	09.11 - 09.21	**Desirability of Outcome Ranking After Endoscopic-Assisted Minimally Invasive Versus Sternotomy Total Arterial Multivessel Coronary Bypass Grafting** *De heer Ismail Cenik, Catharina Ziekenhuis, Eindhoven*
3	09.22 - 09.32	**Pixels Versus Pressure: Comparing Computed Tomography and Fractional Flow Reserve in Stable Coronary Artery Disease** *De heer Stan Toonen, Zuyderland MC, Heerlen*
4	09.33 - 09.43	**Sex Differences and Outcomes After Coronary Artery Bypass Grafting in Patients With Impaired Renal Function: A Nationwide Cohort Study from the Netherlands Heart Registration database** *Mevrouw Dilek Hussain, Amsterdam UMC, Amsterdam*
5	09.44 - 09.54	**Interrupted versus Uninterrupted Direct Oral Anticoagulation in Patients undergoing Percutaneous Coronary Intervention: a Retrospective Analysis of two Prospective Registries.** *Mevrouw Sanne Janssen, Zuyderland MC, Heerlen*
6	09.55 - 10.05	**(Non) ST elevation infarction ((N)STEMI) with cancer: gender differences in clinical presentation, treatment and prognosis** *Mevrouw Noura Laachir, LUMC, Leiden*
7	10.06 - 10.16	**Del Nido versus Custodiol Cardioplegia in Adult Cardiac Surgery: a Matched Single-Center Cohort Study** *Mevrouw Yael Herlaar, Radboud UMC, Nijmegen*
8	10.17 - 10.27	**Long-Term Outcomes after Surgical Correction of Anomalous Left Coronary Artery from the Pulmonary Artery across the Age Spectrum** *De heer Walid Saleh, LUMC, Leiden*

Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 1

Safety of Very Early Discharge (<48 Hours) After Primary Percutaneous Coronary Intervention in Patients With ST-Segment Elevation Myocardial Infarction: A Systematic Review and Meta-Analysis

Presenting author: R. Dijkman
Department: Medical BioSciences

R. Dijkman (Radboud University Medical Center, Nijmegen); R. Dijkman (Radboud University Medical Center, Nijmegen); A.C. Dimitriu-Leen (Radboud University Medical Center, Nijmegen); N.A. Stens (Radboud University Medical Center, Nijmegen); R.J.M. van Geuns (Radboud University Medical Center, Nijmegen); D.H.J. Thijssen (Radboud University Medical Center, Nijmegen)

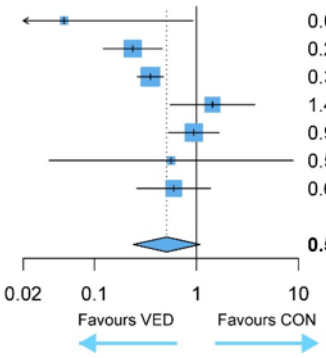
Purpose:
Very early discharge after primary percutaneous coronary intervention (PCI) may improve healthcare capacity and resource utilization, provided that patient safety is maintained. This systematic review and meta-analysis evaluated the safety of very early discharge within 48 hours after primary PCI compared with standard discharge.
Methods:
MEDLINE, Embase, Cochrane Library, and Web of Science were searched from January 2011 to June 2026. Randomized controlled trials and observational cohort studies comparing very early (<48 hours) with standard discharge (>48 hours) in STEMI patients undergoing primary PCI were eligible. Mortality and major adverse cardiovascular events (MACE) were assessed, with short-term outcomes (<30 days) summarized descriptively and long-term outcomes (12 months) pooled using random-effects meta-analysis with risk ratios (RRs) and 95% confidence intervals (CIs).
Results:
Ten observational studies including 17,598 patients were identified. Short-term mortality rates ranged from 0.0-0.7% in the very early discharge group and 0.0-1.7% in the standard discharge group; short-term MACE rates ranged from 0.0-0.9% and 0.0-3.5%, respectively. Long-term mortality was not significantly different between very early and standard discharge (RR 0.51, 95% CI 0.24–1.08; p=0.07; I^2=71.3%). Long-term MACE was significantly lower among patients discharged within 48 hours (RR 0.52, 95% CI 0.30–0.89; p=0.03; I^2=72.7%).
Conclusion:
Very early discharge within 48 hours after primary PCI appears feasible and may be safe in carefully selected low-risk STEMI patients. The lower risk of long-term MACE should be interpreted cautiously given potential patient selection and residual confounding. These findings support further evaluation of very early discharge pathways using standardized patient selection strategies.

Keywords:
STEMI, Very early discharge, Primary PCI

Figure:
Forest plot of long-term mortality comparing very early discharge (VED) with standard discharge (CON) after primary PCI in patients with STEMI. VED, very early discharge; CON, standard discharge; RR, risk ratio; CI, confidence interval.

		VED		CON					
Study	**Design**	**Events**	**Total N**	**Events**	**Total N**	**FU duration (months)**	**RR**	**95% CI**	**Weight**
Karabulut et al., 2011	retrospective	0	184	4	83	12	0.05	[0.00; 0.92]	3.5%
Jones et al., 2012	prospective	10	830	63	1242	12	0.24	[0.12; 0.46]	18.6%
Noman et al., 2013	retrospective	67	1542	111	906	19	0.35	[0.26; 0.47]	23.1%
Rehmat et al., 2020	prospective	13	285	6	189	17	1.44	[0.56; 3.71]	14.9%
Yndigegn et al., 2022	retrospective	14	1449	68	6643	12	0.94	[0.53; 1.67]	19.8%
Telayna et al., 2023	prospective	1	101	1	57	12	0.56	[0.04; 8.85]	3.8%
Rathod et al., 2025	prospective	9	1500	14	1400	12	0.60	[0.26; 1.38]	16.3%
Random effects model (REML, Hartung-Knapp adjustment)							**0.51**	**[0.24; 1.08]**	**100.0%**

Heterogeneity: I^2 = 71.3% [37.7%; 86.8%], τ^2 = 0.36 [0.05; 4.54]
Test for overall effect: t_6 = −2.20 (p = 0.07)



Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 2

Desirability of Outcome Ranking After Endoscopic-Assisted Minimally Invasive Versus Sternotomy Total Arterial Multivessel Coronary Bypass Grafting

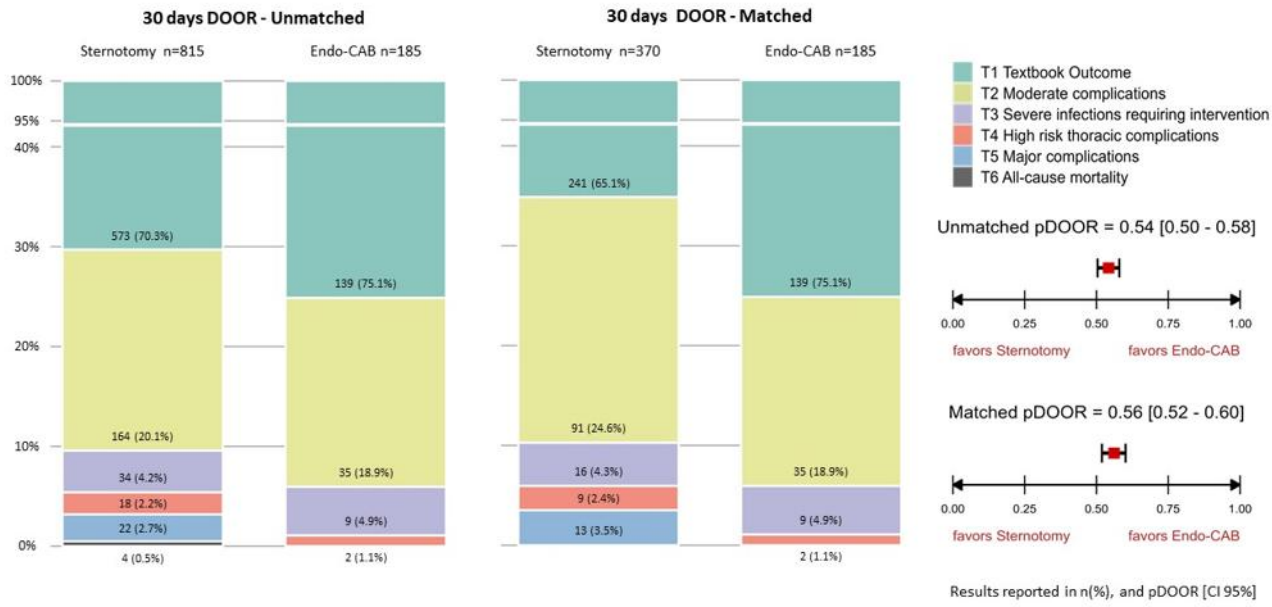
Presenting author: I. Cenik
Department: Cardiothoracic Surgery

I. Cenik (Catharina Hospital Eindhoven, Eindhoven); I. Cenik (Catharina Hospital Eindhoven, Eindhoven); D.Q. Gortzen (Catharina Hospital Eindhoven, Eindhoven); J. ter Woorst (Catharina Hospital Eindhoven, Eindhoven); B. Koene (Catharina Hospital Eindhoven, Eindhoven); M. van 't Veer (Catharina Hospital Eindhoven, Eindhoven); F. Akca (Catharina Hospital Eindhoven, Eindhoven)

Purpose:
Traditional CABG analyses emphasize major events but often overlook patient oriented outcomes when major clinical events are infrequent. Endoscopic-assisted coronary artery bypass grafting (Endo-CAB) reduces access-related trauma. Desirability of outcome ranking (DOOR) offers integrating clinical and patient-centered endpoints.
This study aims to determine whether Endo-CAB is associated with a more desirable 30-day postoperative course than sternotomy CABG.
Methods:
This single-centre retrospective cohort included patients undergoing total-arterial multivessel CABG between December 2018 and January 2026. Endo-CAB comprised endoscopic-assisted off-pump CABG (OPCAB). The sternotomy cohort comprised CABG and OPCAB. Endo-CAB was propensity-score matched 1:2 based on baseline characteristics. The 30-day endpoints were Textbook Outcome (TO) and DOOR. TO required survival without re-exploration, postoperative ischemia, tamponade, stroke, wound infection, new-onset AF, pneumonia, chest-drain reinsertion or hospitalization >7days. For DOOR, each patient was assigned to the least desirable tier reached postoperatively: T1: TO; T2: hospitalization, AF, pneumonia, wound infection, T3: tamponade, thoracic or wound-related reintervention, T4: re-exploration, mediastinitis, T5: stroke, ischemia and T6, mortality. All possible cross-group patient pairs were compared. A favourable tier constituted a win. 30-day readmission and transfusion resolved ties. The pDOOR was calculated as (wins+0.5×ties)/all pairwise comparisons, with 95% CI derived from 2,000 bootstrap resamples. A pDOOR above 0.50 favoured Endo-CAB.
Results:
In total, 1000 patients received surgical revascularization. After propensity matching, 555 were included (sternotomy, n=370; Endo-CAB, n=185). TO was more frequent after Endo-CAB (75.1% vs 65.1%; P=0.017). DOOR analysis demonstrated a more desirable outcome after Endo-CAB (pDOOR 0.56, 95% CI 0.52–0.60; P=0.0015). High-severity postoperative events classified within tiers 4–6 occurred in 2 (1.1%) Endo-CAB vs. 22 (5.9%) CABG patients (P=0.007).
Conclusion:
In this cohort, Endo-CAB patients more frequently achieved Textbook Outcome and encountered significantly fewer high-severity postoperative events. DOOR provided concordant findings and may serve as a supportive framework integrating clinical and patient-centered outcomes into a single hierarchical measure.

Keywords:
Endoscopic coronary artery bypass grafting, off-pump coronary artery bypass grafting, minimally invasive coronary surgery

Figure:



Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 3

Pixels Versus Pressure: Comparing Computed Tomography and Fractional Flow Reserve in Stable Coronary Artery Disease

Presenting author: S.M.R.L. Toonen
Department: Cardiologie

N.P.A. Vranken (Maastricht University Medical Centre, Maastricht); *N.P.A. Vranken (Maastricht University Medical Centre, Maastricht);*
S.M.R.L. Toonen (Zuyderland Medical Centre, Heerlen)
M. Versteylen (Zuyderland Medical Centre, Heerlen);
I. Houben (Zuyderland Medical Centre, Heerlen);
S. Rasoul (Zuyderland Medical Centre, Heerlen)

Purpose:
While coronary computed tomography angiography (CCTA) is commonly applied, invasive coronary angiography remains the gold standard for assessment of coronary artery disease (CAD), with fractional flow reserve (FFR) as an objective measurement to evaluate hemodynamically relevant coronary artery stenoses. This study compared the diagnostic accuracy of CCTA and FFR.
Methods:
In a cohort of stable CAD patients undergoing both CCTA and FFR measurements, diagnostic performance metrics of CCTA were calculated in reference to FFR. A FFR value ≤80 was considered as hemodynamically significant. Correlations between CCTA findings and FFR values were assessed per coronary artery.
Results:
In 723 patients undergoing CCTA, 406 underwent FFR measurements. In CCTA, more patients were identified as positive for CAD compared to FFR (42.5% vs. 15.8%). Overall diagnostic accuracy showed a sensitivity of 75.9% (95% confidence interval (CI) 62.8-85.4), specificity of 24.4% (95% CI 20.2-29.2), positive predictive value (PPV) of 13.4% (95% CI 10.0-17.7), and a negative predictive value (NPV) of 86.9% (95% CI 78.8-92.1). Coronary-specific differences were observed, as sensitivity was the highest in the right coronary artery (RCA) (85.7%), and specificity was highest in the circumflex artery (42.9%). PPV was 42.9% in the left main artery, and NPV was 95.5% in the RCA. The correlation between CCTA findings and FFR ranged from -0.437 and 0.296.
Conclusion:
CCTA overestimates the presence of significant stenoses compared to FFR, with limited diagnostic accuracy. While useful for ruling out CAD in patients with low pre-test probability, the performance of CCTA varied across coronary arteries.

Keywords:
Fractional flow reserve, Coronary computed tomography angiography, Coronary artery disease

Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 4

Sex Differences and Outcomes After Coronary Artery Bypass Grafting in Patients With Impaired Renal Function: A Nationwide Cohort Study from the Netherlands Heart Registration database

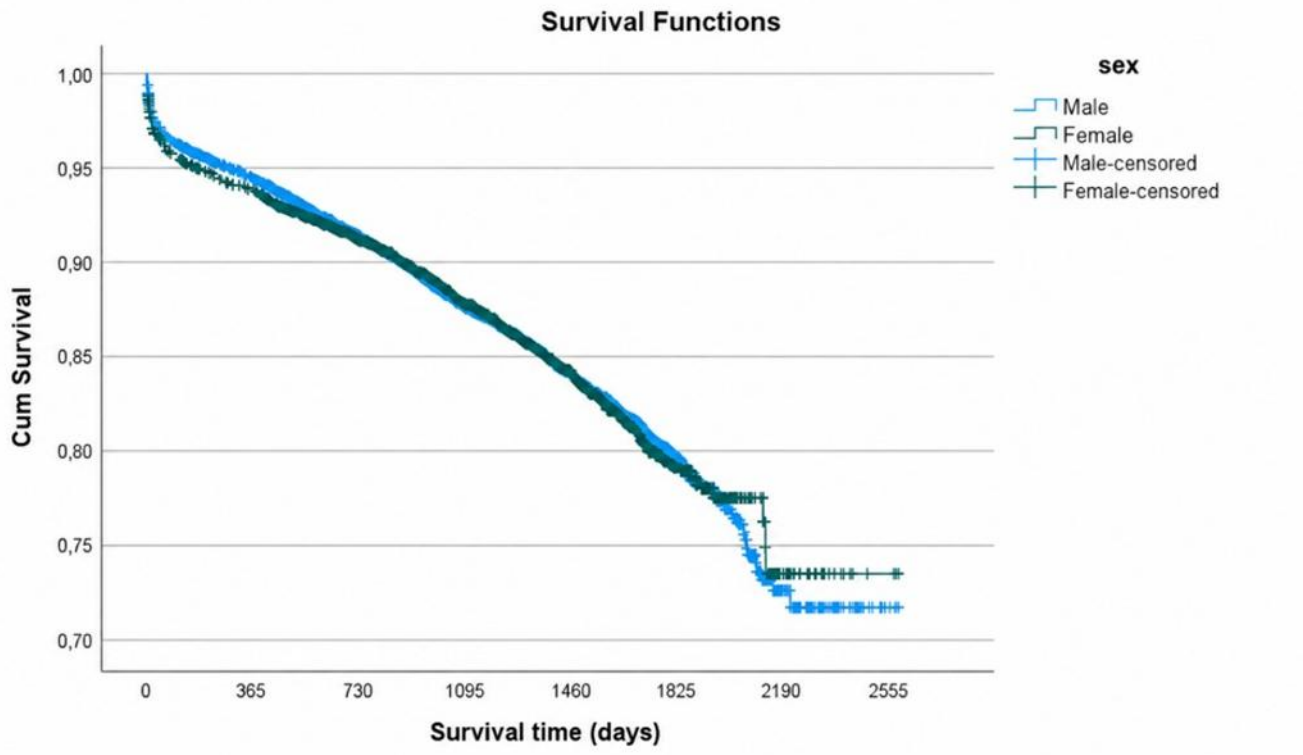
Presenting author: D. Hussain
Department: Health and Life Sciences

F.J. ter Woorst (Catharina Hospital, Eindhoven); F.J. ter Woorst (Catharina Hospital, Eindhoven) ; D. Hussain (Amsterdam University Medical Center location VUmc, Amsterdam) ; J.Y. Zhou (Amsterdam University Medical Center location VUmc, Amsterdam) ; C.J.A.M. (Catharina Hospital, Eindhoven) ; D. van de Kerkhof (Catharina Hospital, Eindhoven) ; L.J. Montenij (Catharina Hospital, Eindhoven) ; S. Houterman (Netherlands Heart Registration, Utrecht) ; M.A. Soliman-Hamad (Catharina Hospital, Eindhoven)

Purpose:
Chronic kidney disease (CKD) is an important predictor of adverse outcomes after coronary artery bypass grafting (CABG). Women undergoing CABG often present with a higher comorbidity burden, but the influence of sex on outcomes in patients with impaired renal function remains unclear. This study evaluated sex-specific differences in short- and long-term outcomes after CABG in patients with preoperative renal dysfunction.
Methods:
We performed a retrospective nationwide cohort study using data from the Netherlands Heart Registration, including patients undergoing isolated CABG between 2013 and 2021. Patients with preoperative renal impairment, defined as estimated glomerular filtration rate (eGFR) <60 mL/min/1.73m², were included. Primary outcomes were postoperative renal failure and 30-day mortality. Secondary outcomes included postoperative complications and late mortality. Multivariable logistic and Cox regression analyses were performed to identify independent predictors of outcome.
Results:
Among 64,480 CABG patients, 13,070 (20.3%) had impaired renal function, including 2,882 women (23.1%). Women were older and had higher rates of cerebrovascular disease, extracardiac arteriopathy, atrial fibrillation, and higher EuroSCORE I values. Despite these differences, female sex was not independently associated with postoperative renal failure (adjOR 1.24, 95% CI 0.92–1.67), 30-day mortality (adjOR 1.01, 95% CI 0.75–1.36), or late mortality (adjHR 1.02, 95% CI 0.97–1.07) in patients with preoperative renal dysfunction. Independent predictors of adverse outcomes included impaired left ventricular function, severe renal dysfunction, diabetes mellitus, COPD, extracardiac arteriopathy, non-elective surgery, and lower preoperative hemoglobin levels.
Conclusion:
: In patients with impaired renal function undergoing CABG, adverse outcomes were primarily driven by comorbidity burden and disease severity rather than sex itself.

Keywords:
Coronary Artery Bypass Grafting, Sex Differences, Renal Dysfunction

Figure:
Kaplan Meier Survival Curve – Impaired renal function population stratified by sex



Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 5

Interrupted versus Uninterrupted Direct Oral Anticoagulation in Patients undergoing Percutaneous Coronary Intervention: a Retrospective Analysis of two Prospective Registries.

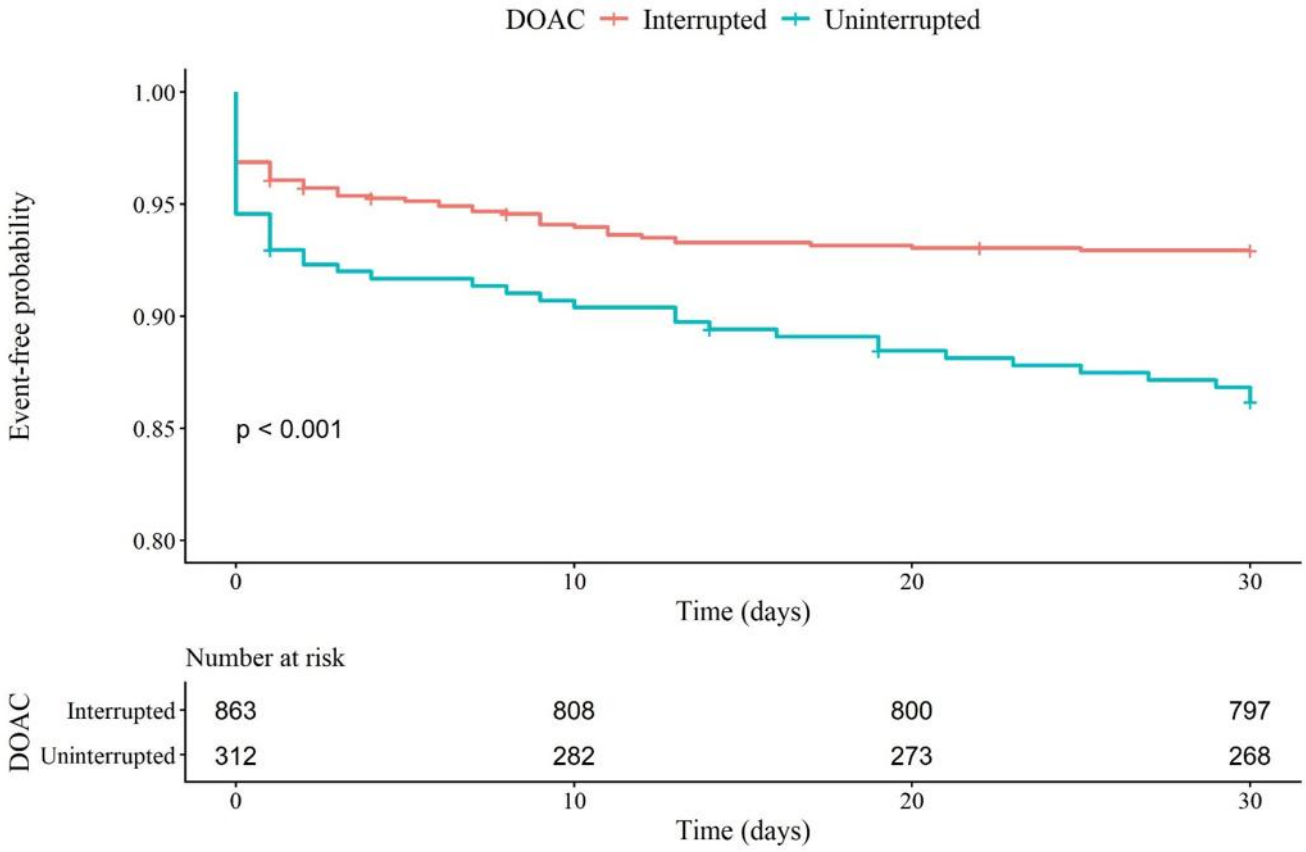
Presenting author: S. Janssen
Department: Cardiology

S. Janssen (Zuyderland MC, Heerlen); A. Verburg (St Antonius, Nieuwegein); D.A.M. Peeters (Radboud UMC, Nijmegen); E.C.I. Woelders (Radboud UMC, Nijmegen); P.J.C. Winkler (Zuyderland MC, Heerlen); W. Bor (St Antonius, Nieuwegein); A. de Veer (St Antonius, Nieuwegein); R.H. Olie (Maastricht UMC+, Maastricht); D.C.P. Yin (St Antonius, Nieuwegein); T. Adriaenssens (University Hospital Leuven, Leuven); W. Dewilde (Imelda Hospital, Bonheiden); P. Damman (Radboud UMC, Nijmegen); J.J.P. Luijkx (Maastricht UMC+, Maastricht); W.S. Remkes (VieCuri MC, Venlo) ; R.J.M. van Geuns (Radboud UMC, Nijmegen); S. Rasoul (Zuyderland MC, Heerlen); J.M. ten Berg (St Antonius, Nieuwegein); A.W.J. van 't Hof (Maastricht UMC+, Maastricht).

Purpose:
Optimal periprocedural management of direct oral anticoagulant (DOAC) therapy in patients undergoing percutaneous coronary intervention (PCI) remains uncertain. We aimed to compare bleeding and ischemic outcomes associated with interrupted versus uninterrupted periprocedural DOAC therapy in patients undergoing PCI.
Methods:
We performed a retrospective analysis of two prospective PCI registries including 1,175 DOAC-treated patients, presenting with acute or chronic coronary syndromes, classified according to periprocedural interrupted (n=863) or uninterrupted (n=312) DOAC management. The primary endpoint was Bleeding Academic Research Consortium (BARC) 2, 3, or 5 bleeding at 30 days. Ischemic endpoints included major cardiovascular and cerebral events and its individual components. Multivariable Cox regression analyses were performed to adjust for baseline characteristics.
Results:
Uninterrupted DOAC therapy was associated with higher rates of BARC 2, 3, or 5 bleeding (14% vs 7.1%, p<0.001), access-site bleeding (8.0% vs 4.2%, p=0.009), and BARC 3 or 5 bleeding (3.8% vs 1.7%, p=0.033). After multivariable adjustment, the association remained statistically significant for BARC 2, 3, or 5 bleeding (HR 1.68, 95% CI 1.05-2.69; p=0.031). Ischemic outcomes were low and similar between groups. The subgroup analysis of 924 patients undergoing PCI via radial access showed more BARC 2, 3, or 5 bleeding in uninterrupted DOAC therapy (HR 2.18, 95% CI 1.20-3.98, p=0.011) in the multivariable model.
Conclusion:
Uninterrupted DOAC therapy was associated with higher bleeding rates without a corresponding reduction in ischemic events. These hypothesis-generating findings favour temporary interruption of DOAC therapy during PCI in the absence of a clear ischemic benefit, pending confirmation in prospective randomized studies.

Keywords:
Percutaneous Coronary Intervention, Direct Oral Anticoagulants, Periprocedural Anticoagulation

Figure:
Figure 1. Kaplan-Meier estimates of cumulative incidence of BARC 2, 3, or 5 bleeding within 30 days after PCI, stratified by interrupted versus uninterrupted DOAC therapy.
BARC, Bleeding Academic Research Consortium; DOAC, direct oral anticoagulant; PCI, percutaneous coronary intervention



Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 6

(Non) ST elevation infarction ((N)STEMI) with cancer: gender differences in clinical presentation, treatment and prognosis

Presenting author: G.A. Dekker
Department: Cardiologie

Noura Laachir; N. Laachir, G.A. Dekker, J.W. Jukema, M.J. Schalij, M.L. Antoni

Purpose:
To assess sex differences in the clinical presentation and treatment of ACS in cancer patient
Methods:
Retrospective cohort study was conducted of patients who presented with a (N)STEMI or unstable angina at the emergency department of the LUMC. Patients were included if they had a previously diagnosed malignancy prior to the ACS event. Clinical presentation was classified as typical, atypical or nonspecific. Differences in treatment regimens were noted. Major adverse cardiovascular events (MACE), re-infarction and overall survival was assessed during follow-up.
Results:
In total 328 patients were included of whom 203 (61.9%) were male. Mean age was 68 (60-76) years in males vs 72 (64.5-78.5) years in females (p=0.005). 153 (75%) of men presented with a STEMI, compared to 93 (74%) in women (p=0.794). Men had significantly higher troponin and CK levels during infarction compared to women (p=0.011 and p=0.046, respectively). After adjusting for age, no significant differences in treatment regimen were observed between males and females for medication-only treatment (p = 0.114), CABG (p = 0.122), or PCI (p = 0.123). In addition, no significant difference in the clinical presentation of the ACS between men and women was observed. In patients with complete follow-up, MACE-free survival (HR 1.160 (95CI 0.692-1.945); p=0.573) an all-cause mortality (HR 0.800 (95CI 0.538-1.188); p=0.268) did not differ significantly between the groups after adjusting for age, troponin and smoking status.
Conclusion:
No significant sex-related differences were observed in the clinical presentation and door-to-balloon time across ACS subtypes. These findings may suggest that, within this specific high-risk population, sex disparities in the acute management of ACS are not apparent.

Keywords:
Sex-differences, Acute coronary syndrome, Cancer

Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 7

Del Nido versus Custodiol Cardioplegia in Adult Cardiac Surgery: a Matched Single-Center Cohort Study

Presenting author: Y.M. Herlaar (Radboud University Medical Center, Nijmegen)
Department: Cardio-Thoracic Surgery

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Purpose:
Del Nido cardioplegia was introduced as an alternative to Custodiol because of its lower administration volume and material costs. We compared myocardial protection, perioperative physiological effects, transfusion requirements and costs in adults undergoing elective cardiac surgery.
Methods:
This single-center observational study included 82 patients undergoing aortic valve replacement, mitral valve repair or replacement, coronary artery bypass grafting, or combined procedures. Forty-one patients receiving Del Nido cardioplegia were matched to 41 patients receiving Custodiol cardioplegia based on age, cardiopulmonary bypass duration and aortic cross-clamp time. The primary outcome was a composite of postoperative troponin T >400 ng/L, inotropic or vasopressor support during weaning from cardiopulmonary bypass, and defibrillation after aortic unclamping. Secondary outcomes included hemodilution, electrolyte concentrations, transfusion requirements and material costs.
Results:
The composite endpoint occurred less frequently with Del Nido cardioplegia (p=0.019), mainly driven by less defibrillation after aortic unclamping (5/41 [12.2%] vs 18/41 [43.9%], p=0.003). Troponin T >400 ng/L occurred in 22/41 (53.7%) Del Nido versus 29/41 (70.7%) Custodiol patients (p=0.171). Lowest haemoglobin was higher with Del Nido (5.1 [4.6–5.7] vs 4.6 [4.3–4.9] mmol/L, p=0.011), as were lowest haematocrit (25.0 [22.5–27.5]% vs 22.0 [20.5–23.5]%, p=0.003) and lowest sodium concentration (133.2±2.3 vs 124.7±4.4 mmol/L, p=0.001). Transfusion requirements did not differ significantly (29.3% vs 43.9%, p=0.255). Mean cardioplegia costs were €82 for Del Nido versus €304 for Custodiol per patient.
Conclusion:
Del Nido cardioplegia was associated with less frequent defibrillation, less haemodilution, less pronounced hyponatraemia and lower material costs than Custodiol, without increased transfusion requirements.

Keywords:
cardiac surgery, del nido, cardioplegia

Session 5: Acute cardiology & Coronairy Artery Disease
Abstract 8

Long-Term Outcomes after Surgical Correction of Anomalous Left Coronary Artery from the Pulmonary Artery across the Age Spectrum.

Presenting author: W. Saleh
Department: Cardiology

W. Saleh; W. Saleh (Leiden University Medical Centre, Leiden); L.M. Putman (Leiden University Medical Centre, Leiden); P.J. van Rosendael (Leiden University Medical Centre, Leiden); P. Kiès (Leiden University Medical Centre, Leiden); B. Straver (Amsterdam University Medical Centre, Amsterdam); B.J. Bouma (Amsterdam University Medical Centre, Amsterdam); N.A. Blom (Leiden University Medical Centre, Leiden); D.R. Koolbergen (Amsterdam University Medical Centre, Amsterdam); M.R.M. Jongbloed (Leiden University Medical Centre, Leiden); J. W. Jukema (Leiden University Medical Centre, Leiden); M.G. Hazekamp (Leiden University Medical Centre, Leiden); A.D. Egorova (Leiden University Medical Centre, Leiden)

Purpose:
Anomalous left coronary artery from the pulmonary artery (ALCAPA) is a rare congenital anomaly, often fatal if untreated. Surgical reimplantation improves survival, but long-term outcome data are limited. We evaluated differences in presentation and outcomes after surgical correction.
Methods:
Consecutive ALCAPA patients followed at the Centre for Congenital Heart Disease Amsterdam-Leiden (1968–2025) were identified retrospectively and stratified by diagnostic age: infantile (≤12 months), paediatric (>12 months–<18 years) or adult (≥18 years). Outcomes were overall survival, survival free from major adverse cardiac events, freedom from coronary reintervention and longitudinal echocardiographic changes.
Results:
Forty-one patients were identified (22 infantile, 5 paediatric, 14 adult; median age at diagnosis 0.3, 10.0 and 33.1 years). All infants presented with failure to thrive; ventricular arrhythmia was the most common presentation in adults (33.3%). Severe left ventricular dysfunction was present in 95.5% of infants and 60.0% of paediatric patients but in none of the adults (mean left ventricular ejection fraction (LVEF) 20.5% vs 53.4%). Thirty-nine (95.1%) underwent surgery. Ten-year survival was 87.8%; all deaths occurred in infants. Five patients (12.2%) required reintervention for stenosis or occlusion of the reimplanted vessel (10-year freedom from reintervention 94.4%). During follow-up, infantile LVEF increased to 55.8%, 59.4% and 56.1% at 1, 5 and 10 years, respectively.
Conclusion:
Age at diagnosis defines distinct ALCAPA phenotypes. Infants present with severe LV dysfunction but demonstrate substantial recovery after surgical repair, whereas adults have preserved LV systolic function, with ventricular arrhythmias representing an important mode of presentation. Coronary complications occur decades after repair, supporting lifelong surveillance.

Keywords:
coronary anomaly, congenital heart disease, long-term outcomes
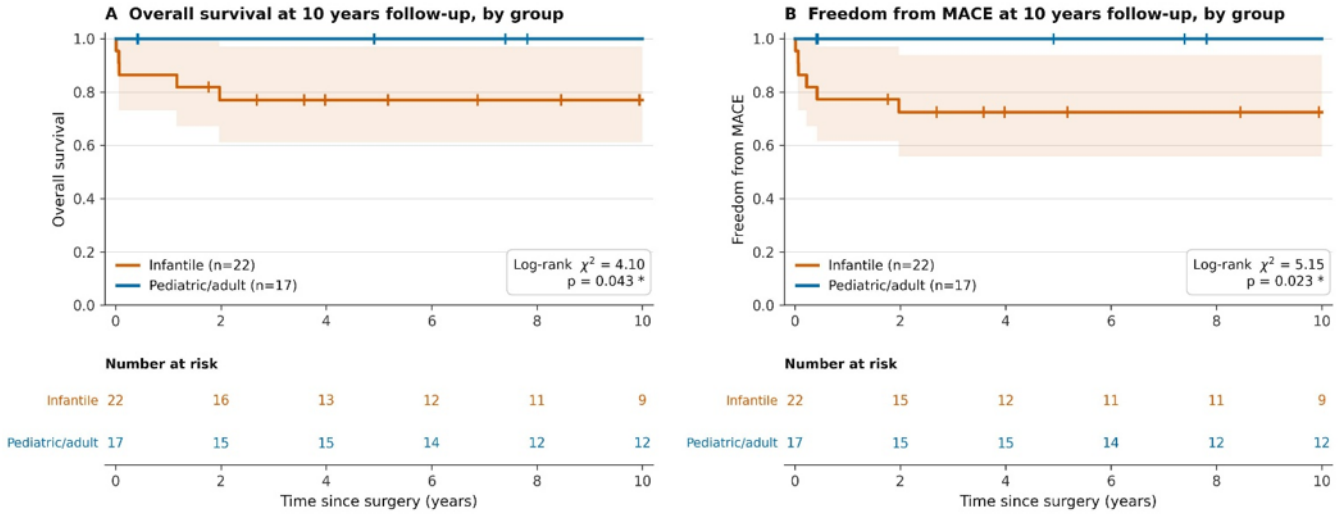
Figure:
Figure 1 A: overall survival after surgery by age group at time of diagnosis (infantile: 12 months or younger, paediatric: older than 12 months and up to 18 years, adults: 18 years and older; B: freedom from major adverse cardiac events after surgery by age group