Abstract sessies Online NVVC Najaarscongres
Donderdag 5 en vrijdag 6 november 2020

Sessie 2 Coronary artery disease

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Characteristics of Women Presenting With an ACS in a Non-interventional Teaching-hospital: Are Non-obstructive Coronary Arteries Prevalent?

Presenting author: G. El Mansouri
Department: Cardiology

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Purpose:
It is commonly known that women differ from men in type and symptoms of coronary artery disease (CAD) and acute coronary syndrome (ACS). This study analyzed the characteristics of the female patient-population seen exclusively with ACS in the Spaarne Gasthuis-hospital (Haarlem) in 2018 with a follow-up period of at least 1 year.
Methods:
Data of 195 women with confirmed diagnosis ACS (after initial testing), were analyzed. Baseline characteristics, final diagnosis, coronary angiography (CAG) and interventions were studied.
Results:
Mean age was 71 years. There were 3 women below the age of 45 years, of which one was diagnosed with non-ST-elevation myocardial infarction (NSTEMI) and one who recently underwent ST-elevation myocardial infarction (STEMI). The majority was diagnosed with NSTEMI (47%), 3 women (1.5%) were seen with STEMI. About 81% underwent CAG, of which 76% showed CAD; mostly one-vessel disease (35%). About 24% had no (significant) CAD: 1.5% had MINOCA, 1.5% SCAD and 3% Takotsubo-cardiomyopathy. CAG was less often performed above the age of 80 years (60%) and none above 90 years underwent CAG.
Conclusion:
According to this data, ACS below the age of 45 years is rarely seen in our hospital. The majority of the women with ACS showed CAD, mainly one-vessel disease, while 24% showed no (significant) CAD, which is corresponding with current literature. MINOCA, SCAD and Takotsubo-cardiomyopathy were also rarely seen. The same applies to STEMI, which is expected in a non-interventional hospital. Especially elderly above 90 years did not undergo CAG, mainly due to age and comorbidity, correlating with recent literature.

Keywords:
ACS, CAD, Women

Figure:
Characteristics of women presenting with an ACS in a non-interventional teaching-hospital (N=195).

	N	Minimum	Maximum	Mean	Std. Deviation
Age	195	33	99	71,21	12,226
<45 years old	3				
45-64 years old	57				
≥65 years old	135				
	Frequency	**Percent**	**<45 yo**	**45-64 yo**	**≥65 yo**
Unstable AP	38	19,5	0	11	27
NSTEMI	91	46,7	1	28	62
STEMI	3	1,5	0	1	2
Recent STEMI	7	3,6	1	0	6
Takotsubo	5	2,6	0	2	3
MINOCA	3	1,5	0	1	2
SCAD	3	1,5	0	3	0
Non-cardiac	8	4,1	1	3	4
Other	40	20,5	0	8	32
	Frequency	**Percent**			
CAG	158	81	2	51	105
	Frequency	**Percent**			
One-vessel disease	68	34,9	1	22	45
Two-vessel disease	24	12,3	1	7	16
Three-vessel disease	19	9,7	0	3	16
None/not significant	47	24,1	0	19	28

Three Year Clinical Outcomes After Implantation of a Permanent Polymer Zotarolimus-Eluting Stent Versus a Polymer-Free Amphilimus-Eluting Stent: The ReCre8 trial

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Department: Cardiology

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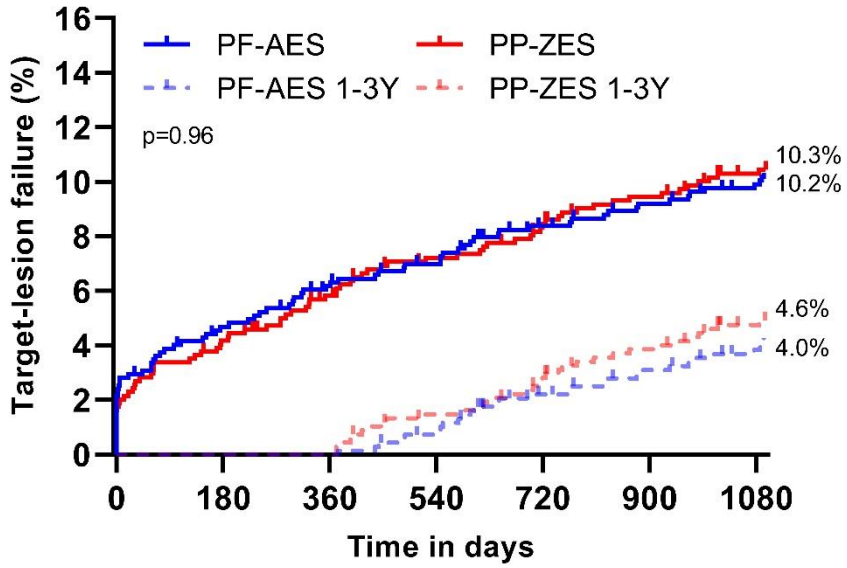
Purpose:
Polymer-free amphilimus-eluting stents (PF-AES) introduce a novel technology improving targeted elution. Clinical performance of polymer-free amphilimus-eluting stents has not yet been compared to latest-generation drug-eluting stents (DES) in a large randomized trial with prolonged follow-up.
Methods:
In the ReCre8 trial, all-comer patients undergoing percutaneous coronary intervention with implantation of a DES were enrolled. Patients were stratified for troponin status and diabetes mellitus after which they were randomized to implantation of either a permanent polymer zotarolimus-eluting stent (PP-ZES; Resolute Integrity) or a PF-AES (Cre8). Duration of dual antiplatelet therapy was similar in both arms with twelve months in troponin positive patients and one month in troponin negative patients. The primary analysis of non-inferiority compared the two study arms regarding the device-oriented primary endpoint of target-lesion failure (TLF) defined as cardiac death, target-vessel myocardial infarction or target-lesion revascularization. Results from the twelve months follow-up period showed non-inferiority of the PF-AES. Follow-up was continued for three years after stent implantation.
Results:
Between Nov 3, 2014 and July 10, 2017, a total of 1491 patients were randomized and treated. After three years, the device-oriented primary endpoint of TLF occurred in 76 (10.3%) patients in the PP-ZES arm versus 76 (10.2%) patients in the PF-AES arm. Clinical non-inferiority of the PF-AES was confirmed with an estimated risk difference of -0.1% (upper limit 1-sided 95% confidence interval 2.7%; Pnon-inferiority=0.0119). Overall, stent thrombosis occurred in 1.1%.
Conclusion:
Based on our results, PF-AES are clinically non-inferior to PP-ZES regarding the primary endpoint of TLF at three years.

Keywords:
Percutaneous coronary intervention, Drug-eluting stents, Coronary artery disease

Figure:
Kaplan-Meier time-to-event estimate for target-lesion failure. The solid lines represent events between index PCI and three years follow-up whereas the dotted lines show events between the first and third year of follow-up. Abbreviations: PF-AES, polymer-free amphilimus-eluting stent; PP-ZES, permanent polymer zotarolimus-eluting stent.



Data Quality of the Percutaneous Coronary Intervention Registry within the Netherlands Heart Registration

Presenting author: S. Houterman
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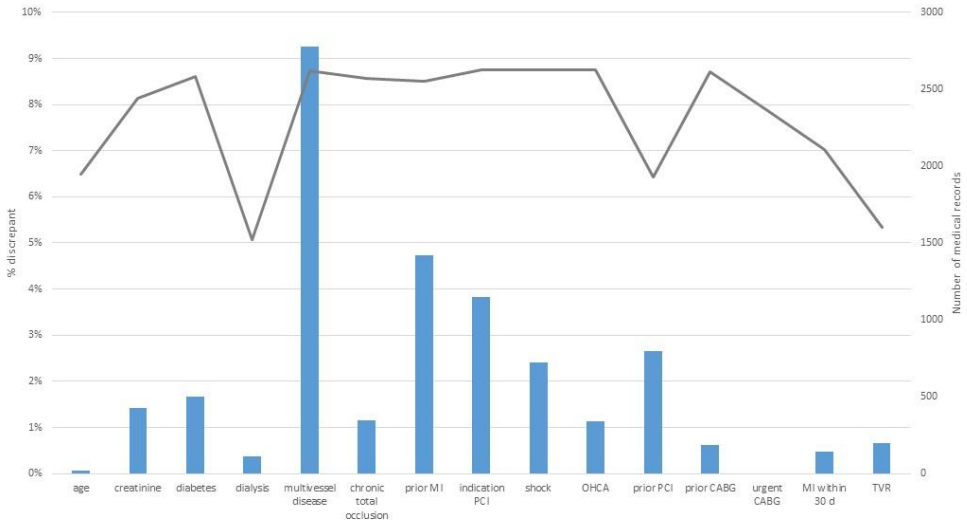
Purpose:
For using data of a large nationwide registry in research and quality projects, it is of utmost importance that these data are accurate. Each year, within the Netherlands Heart Registration (NHR), data validation and verification is performed by an audit. The purpose of this presentation is to show the results of the audit in 2019 of patients treated with percutaneous coronary intervention (PCI) in the Netherlands.
Methods:
The NHR is a Dutch nationwide registry of all cardiac interventions, comprising data of all 30 PCI centers. For the audit in 2019, a sample of approximately 10% of the medical records of patients treated with PCI in 2016 and 2017 were reviewed in each hospital by an independent auditor. The data received by the NHR was verified in the medical records within the hospitals. In total 12 patient characteristics, 5 intervention variables (results not shown) and 3 outcome variables were screened. A variable was considered discrepant if more than 10% of the medical records reviewed on this variable was not consistent with the reported data received by the NHR.
Results:
For all variables together, the consistency was high, 97.6% (figure 1). All variables, except multivessel disease (9.3% discrepancy of the 2622 medical records reviewed), had an accuracy above 95%.
Conclusion:
The results of the audit of the PCI medical records in 2019 show that the overall quality of the data is high. For variables like multivessel disease it is important to improve (the awareness of) the definition and the registration within the hospitals.

Keywords:
data quality, percutaneous coronary intervention, Netherlands Heart Registration

Figure:
Figure 1: Overview of the discrepancies per variable and the total number of medical records of PCI patients reviewed in 2019 within all hospitals



Feasibility and Safety of Cangrelor in patients with inadequate P2Y12 inhibition undergoing (Primary) Percutaneous Coronary Intervention: Dutch Cangrelor Registry

Presenting author: A. Selvarajah
Department: Cardiology

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Purpose:
Cangrelor is a potent and rapid-acting intravenous P2Y12 inhibitor and has a potential beneficial profile in reducing ischemic risks without increase in bleeding in high thrombotic risk patients undergoing (primary) PCI. Since cangrelor is rarely used in The Netherlands we conducted a nationwide registry to demonstrate the efficacy and safety of cangrelor in these patients with inadequate P2Y12 inhibition undergoing (primary) PCI.
Methods:
We performed a prospective, observational, multicenter, single-arm registry with cangrelor administered pre-PCI to assess the efficacy and safety of this agent in:
1. P2Y12 naive patients with ad-hoc PCI, 2. in patients with STEMI/NSTEMI with suboptimal P2Y12 inhibition including 3. patients with out-of-hospital cardiac arrest (OHCA), and 4. In STEMI/NSTEMI patients with a high thrombotic burden, who all underwent (primary) PCI. The primary endpoint was 48 hours Net Adverse Clinical Events (NACE), which was a composite endpoint of all-cause death, recurrent myocardial infarction, target vessel revascularization, stroke, definite or probable stent thrombosis and bleeding (BARC type 2-5).
Results:
We enrolled 250 patients who underwent ad-hoc or (primary) PCI. Mean age of the patients was 65 years, and 26.4% were women. The indications for administration of cangrelor was naïve for P2Y12 inhibition in 58.4% of the patients undergoing ad-hoc PCI, STEMI/NSTEMI with suboptimal P2Y12 inhibition in 28.4%, OHCA in 8.0%, and STEMI/NSTEMI with high thrombus burden in 3.2% and 2.0%, respectively.
At 48 hours the primary endpoint occurred in 20 (8.0%) patients. All-cause death in 1 patient (0.4%), recurrent myocardial infarction in 0 (0%), target vessel revascularization in 0 (0%), stroke in 0 (0%), definite or probable ST in 1 (0.4%) and bleeding (BARC 2-5) in 18 patients (7.2%). The rate of BARC 2 bleeding was 6.8% and the rate of BARC 3 bleeding was 0.4%. The 30-day follow up of this registry is not fully completed. The final results will be provided at the upcoming NVVC congress.
Conclusion:
The preliminary results of the use of cangrelor in these high thrombotic risk patients with inadequate P2Y12 inhibition who underwent ad-hoc or primary PCI show a low rate of adverse ischemic/thrombotic events. Cangrelor is safe and feasible in this high risk category of patients.

Keywords:
Cangrelor, P2Y12 inhibitors, Percutaneous coronary intervention

A Prospective Cohort Study to the Optimal Radial Closure Device Duration with or without StatSeal

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Purpose:
The purpose of our study was to compare the influence of the different radial band deflation protocols on radial occlussion, bleeding events, hematomas, pain and discomfort in patients.
Methods:
A single centre prospective study was set up to compare 3 different types of radial band deflation protocols. A total of four hundred and twenty patients undergoing transradial coronary intervention were included. Group 1 (n=120) patients followed the standard (4 hour) radial band deflation protocol, group 2 (n=120) patients followed the 2 hour radial band deflation protocol and group 3 (n=120) patients followed the one hour deflation protocol with StatSeal. Baseline characteristics and procedural variables were registered. Also all radial occlusions, bleeding complications, hematomas, pain and discomfort in patients were registered.
Results:
Radial occlusion was observed in only patient in group 1. The most bleeding events occured in group 2 and the least in group 3. The most hematomas occured in group 3. No intervention was needed. Pain and discomfort was seen in group 3 right after a procedure, but was less after one hour compared to the other two groups.
Conclusion:
Considering radial occlusion, bleeding events, hematomas, pain and discomfort in patients, the one hour protocol could be safe and comfortable for the patient.

Keywords:
radial band, StatSeal

MINOCA: the Caveat of Absence of Coronary Obstruction in Myocardial Infarction
Presenting author: N.P.A. Vranken
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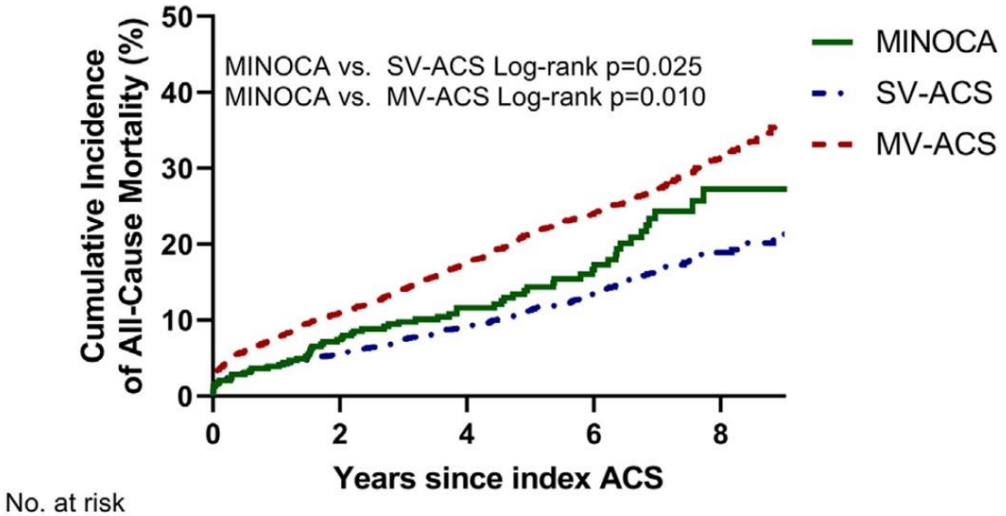
Purpose:
Whether patients with MINOCA (myocardial infarction with non-obstructive coronary arteries) have better outcomes than patients with obstructive coronary artery disease remains contradictory. The current study focused on the clinical profile and prognosis of MINOCA patients.
Methods:
We performed a retrospective analysis of patients with acute coronary syndrome (ACS) admitted to the Isala hospital in Zwolle, the Netherlands, between 2006 and 2014.
Results:
A total of 7693 patients were categorized into three groups: MINOCA, single-vessel obstructive ACS (SV-ACS), and multi-vessel obstructive ACS (MV-ACS). The MINOCA patients (5.2% of the total population) were more likely to be female (51.5% vs. 30.3% and 26.0% in SV-ACS and MV-ACS, respectively, $p<0.001$ for both). The prevalence of cardiovascular risk factors including hypertension, hypercholesterolemia, diabetes mellitus, in the MINOCA group was in between the SV-ACS and MV-ACS groups, which translated to significantly different survival times at maximum follow-up (Figure 1). Logistic regression revealed a lower odds of dying in SV-ACS (odds ratio (OR)=0.70 ($p=0.04$)) and a similar odds in MV-ACS (OR=0.88, $p=0.45$) compared to MINOCA when corrected for age, current smoking, diabetes mellitus, creatinine at admission, and presentation with ST-elevation ACS.
Conclusion:
Patients with MINOCA show an 'intermediate' risk profile with mortality rates in between those of both ACS groups. Hence, MINOCA should be recognized as a potential risk factor for mortality, requiring adequate treatment and follow-up.

Keywords:
MINOCA, myocardial infarction,

Figure:
Figure 1. Cumulative crude all-cause mortality across groups at maximum follow-up.



No. at risk					
MINOCA	386	326	216	133	41
SV-ACS	3203	2710	1927	1162	282
MV-ACS	3876	3011	2053	1207	297