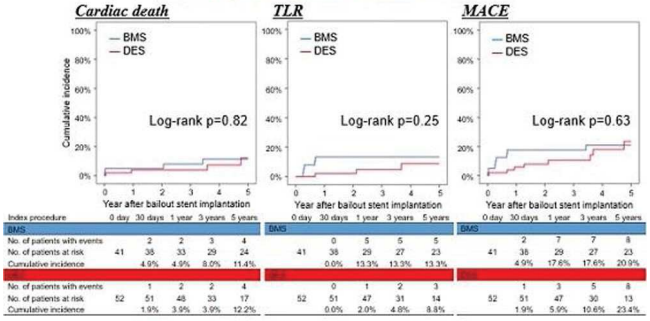
occurred in 11 cases (18.0%), two patients (3.3%) died from non-cardiovascular cause, there was no case of MI or ST during follow up period. Angiographic efficacy was lower in patients with complex lesion PCI as compared to patients without complex lesion PCI (21.9% versus 13.8%). Rates of all-cause mortality, MI and ST were comparable between patients with and without complex lesions.
Conclusions: In this retrospective analysis, implantation of a new generation single layer PTFE-CS, for the treatment of coronary artery perforation showed high technical success rates. Although, peri-procedural MI - and in-hospital-death rates, mirror the still severe aftermath of coronary perforations, new generation PTFE-CS showed favorable angiographic and clinical efficacy and high safety profile, especially with regard to thrombotic events.

P4560
Long-term outcomes of iatrogenic coronary artery dissection during cardiac catheterization

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Background: Iatrogenic coronary artery dissection due to diagnostic or guiding catheter during coronary catheterization is a rare but feared complication. When it occurs, bailout stent implantation is the widely used therapy. However, its long-term prognosis remains unclear.
Purpose: We aimed to describe the long-term outcomes after bailout stent implantation for iatrogenic coronary artery dissection.
Methods: The study sample consisted of 77257 patients undergoing coronary angiography (CAG, 55864 patients) and percutaneous coronary intervention (PCI, 21393 patients) between January 2000 and December 2015. We investigated the incidence of iatrogenic coronary artery dissection, 5-year clinical outcomes and angiographic results after bailout stent implantation, and compared them between used stent types: bare metal stent (BMS) and drug-eluting stent (DES). Clinical outcomes were evaluated by cardiac death, target lesion revascularization (TLR), and major adverse cardiac events (MACE) including cardiac death, nonfatal myocardial infarction and TLR. Two serial angiographic follow-ups were routinely performed at 6 to 8 and 18 to 20 months after the procedure.
Results: Iatrogenic coronary artery dissection occurred in 105 patients (during CAG, 11 patients; during PCI, 94 patients). Thus, its incidence was 0.14% (CAG, 0.02%; PCI, 0.44%) and it was approximately twenty times as likely to occur during PCI compared to CAG. In 12 patients, dissection was mild and did not worsen with time; therefore, no bailout procedure was done. Then, bailout stent implantation was performed on 93 patients. During a median follow-up of 51 months after bailout procedure, the cumulative incidence of cardiac death was 11.3%, TLR was 10.3%, and MACE was 21.0%. There were no significant differences in those clinical outcomes between BMS and DES groups (Figure 1). The binary restenosis rate at early follow-up angiography was 10.4%, there was no significant difference between BMS and DES groups (16.7% versus 4.9%, p=0.14). In the lesion which originally had a stenosis and left main trunk, however, binary restenosis rate was tend to be lower after DES implantation than after BMS implantation (Figure 2). On the other hand, coronary artery dissection reappeared in 8 patients, it was observed only after DES implantation and its rate was significantly higher after DES implantation than after BMS implantation (0.0% versus 19.5%, p<0.01). Late restenosis was not observed in both two groups. In coronary artery dissection reappeared cases, late follow-up angiography was performed in 5 patients and the dissection remained in all cases.
Conclusions: The long-term outcomes with bailout stent implantation for iatrogenic coronary artery dissection were acceptable. There were no significant differences in long-term outcomes between BMS and DES implantation. After DES implantation, however, coronary artery dissection could reappear, and we should follow up carefully.

Figure 1: Clinical Outcomes

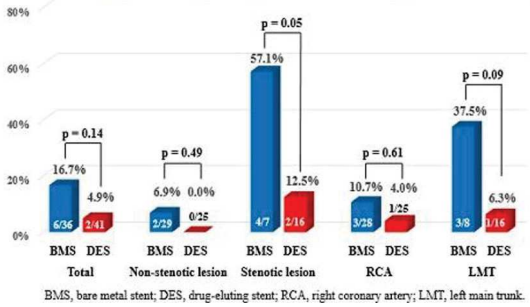


Index procedure	0 day	30 days	1 year	3 years	5 years
BMS					
No. of patients with events		2	2	3	4
No. of patients at risk	41	38	33	29	24
Cumulative incidence		4.9%	4.9%	8.0%	11.4%
DES					
No. of patients with events		1	2	2	4
No. of patients at risk	52	51	48	33	17
Cumulative incidence		1.9%	3.9%	3.9%	12.2%

Index procedure	0 day	30 days	1 year	3 years	5 years
BMS					
No. of patients with events		0	5	5	5
No. of patients at risk	41	38	29	27	23
Cumulative incidence		0.0%	13.3%	13.3%	13.3%
DES					
No. of patients with events		0	1	2	3
No. of patients at risk	52	51	47	31	14
Cumulative incidence		0.0%	2.0%	4.8%	8.8%

Index procedure	0 day	30 days	1 year	3 years	5 years
BMS					
No. of patients with events		2	7	7	8
No. of patients at risk	41	38	29	27	23
Cumulative incidence		4.9%	17.6%	17.6%	20.9%
DES					
No. of patients with events		1	3	5	8
No. of patients at risk	52	51	47	30	13
Cumulative incidence		1.9%	5.9%	10.6%	23.4%

Figure 2: Binary Restenosis Rate



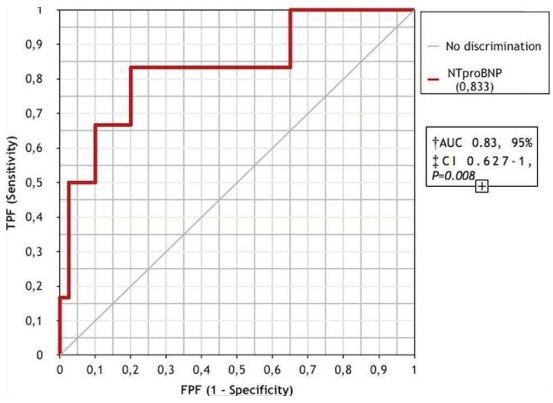
BMS, bare metal stent; DES, drug-eluting stent; RCA, right coronary artery; LMT, left main trunk.

Clinical outcomes and restenosis rate

P4561
Relevance of N-terminal fragment of brain natriuretic peptide in prediction of new cerebral infarcts in acute pulmonary embolism

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Introduction: Pulmonary embolism (PE) is associated with a risk of consecutive paradoxical embolism with brain infarction through patent foramen ovale (PFO). The purpose of this study was to assess the capability of N-terminal fragment of brain natriuretic peptide (NT-proBNP) to predict new clinical ischemic stroke (IS) events during 12 month follow-up period (FUP) of oral anticoagulation therapy.
Methods: Seventy-eight consecutive acute PE patients underwent baseline contrast transoesophageal echocardiography together with evaluation of NT-proBNP value. Rates of clinical IS events were analyzed with respect to the the presence of PFO (present in 31 out of 78 patients).
Results: Thirteen patients were lost to follow-up. Eleven new clinically apparent IS events were recorded during a 12-month FUP. Among those, 7 (66%) were classified as stroke (median National Institute of Health Stroke Scale (NIHSS) 6 points (range 2–34)) with 5 of them (71%) in anterior circulation. Remaining 4 patients were classified as transient ischemic attack (TIA) with motor symptoms in 50% of cases. There was no significant difference in the rate of apparent IS event in PFO group (n=4, 12.9%) compared to non-PFO patients (n=3, 6.4%; P=0.324). Baseline NT-proBNP was identified as a significant predictor of IS/TIA during the 12-month follow-up period. Based on c-analysis, the NT-proBNP cut-off value of 2473 ng/L was found to be a predictor of new IS/TIA during the FUP, with an 83% sensitivity and an 80% specificity (odds ratio 20.0, area under curve 0.83 [0.32 to 1.0]; P=0.008).



Conclusions: In patients after acute PE on effective oral anticoagulation therapy, NT-proBNP gives reliable predictive information concerning new IS events during 12 month follow-up and could be used as a relative specific marker of ischemic stroke risk.
Funding Acknowledgements: Study was supported by the institutional support of the research organization – Ministry of Health, Czech Rep. no. 17-0101A and by IGA LF UP_010_2017

P4562
Predictors of complex aortic plaques in patients undergoing transeusophageal echocardiographic study

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Introduction: CHA2DS2-VASc score is a widely used score to estimate systemic tromboembolism and stroke risk in patients with non-valvular atrial fibril-

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lation (AF). Beside cardioembolism, ischemic stroke may be due to large artery atherosclerosis which is an aetiologic group in TOAST classification. Complex aortic plaques (CAP) which are located in proximal aorta and larger than 4 mm, may cause ischemic stroke. There are several reports in literature which advocate that CHA2DS2-VASc score may also predict stroke risk in patients without AF.
Purpose: We aimed to investigate the relationship between CHA2DS2-VASc score and aortic plaques in patients with or without previous stroke.
Material/Methods: We retrospectively investigated 405 patients who underwent transtorasic echocardiography and subsequent transeusophageal echocardiography between 2016 and 2018 for any clinical reason. Baseline characteristics of the patients were recorded. The maximum thickness of aortic plaque was measured from media of arterial wall to lumen, at the most protruded point. Aortic plaques are classified as complex, which are protruding more than 4 mm, mobile or have irregular boundaries.
Results: The data of 405 patients were reviewed, and 73 CAPs were detected. Patients' baseline characteristics were demonstrated in table 1. Considering all patients, CHA2DS2-VASc score was significantly associated with CAP ($p<0.001$, OR: 3.947 2.907–5.360, CI 95%). Age, history of hypertension, coronary artery disease, diabetes, atrial fibrillation and echocardiaographic variables such as ejection fraction, left atrial thrombus and left atrial diameter were also significantly associated with presence of CAP. In multivariate analysis, CHA2DS2-VASc score being the most significant, male sex, HT, DM and coronary artery disease were independently associated with CAP.
Among patients with previous stroke, there were 29 patients with CAP and 108 patients without CAP. CHA2DS2-VASc score is was also associated with CAP in patients with previous stroke ($p<0.001$,OR: 5.004 (2.802–8.935) CI 95%). Age, history of hypertension, coronary artery disease, diabetes, atrial fibrillation and above mentioned echocardiographic variables were also significantly associated with presence of CAP. In multivariate analysis male sex, DM and CHA2DS2-VASc (OR 82.62 7.3–938.0 95%) score were independently associated with CAP.

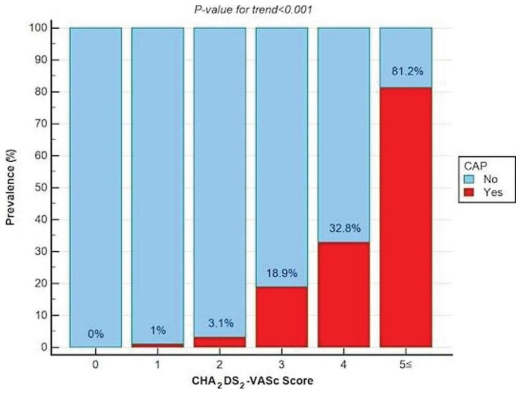


Figure 1

Conclusion: Although it is validated to estimate thromboembolic risk in patients with non-valvular AF, the results of this study shows that a high CHA2DS2-VASc score may also indicate increased risk for CAP. Furthermore since the patients with stroke and CAP had the highest score, the validation of CHA2DS2-VASc to estimate ischemic stroke risk in patients with CAP may be recommended.

P4563
Predictors of recurrent stroke

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Study of the relationship between various parameters: clinical, biochemical, metabolic, vascular-inflammatory, molecular-genetic and the development of recurrent ischemic stroke, and the development of a predictive model for determining the probability of its occurrence.
Material and methods: The study consistently included 196 patients over the age of 25 (men / women 115 (58.7%) / 81 (41.3%), mean age 56 (10) years) who suffered the first ischemic stroke and entered the center of speech pathology and neurorehabilitation. One-time evaluation of the main anthropometric, clinical, biochemical and metabolic parameters was carried out; markers of vascular inflammation and endothelial dysfunction; genotyping of single nucleotide polymorphisms of genes: IL8, ADIPOQ, ADIROR, APOB, APOC-IV, BDNF, GRM3 using TaqMan ready probes. Patient follow-up continued for an average of 36 months.
Results: During follow-up, 58 people underwent repeated ischemic strokes. The following initial parameters were statistically significantly related to the results of the correlation analysis, with repeated ischemic stroke: height, weight, sex, diabetes, insulin, adiponectin, triglycerides, C-reactive protein, glucose, uric acid, IL-4, VEGF-A. The binary logistic regression method was used to construct the forecast model. The final model includes the following independent variables: sex and adiponectin. The overall percentage of consent for all patients was 82.7%. In accordance with the received data, the ROC-curve (Receiver Operating Characteristic) was constructed, the area under the ROC-curve was 0.875 (CI 0.824–0.926).
Conclusion: Based on the data obtained in this study, a model for the likelihood of recurrent ischemic stroke was obtained. Of all the parameters studied in the study, the greatest contribution to the probability of recurrent ischemic development, according to the model obtained, is made by parameters: sex and adiponectin.

P4564
Impact of stroke events in patients with atrial fibrillation detected by cardiac implantable electronic devices from Far East

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Background: Atrial fibrillation (AF) is the most common arrhythmia. AF-related stroke tends to be more severe, and the mortality rate is higher compared with stroke without AF. The definition of AF in patients with implanted cardiac implantable electronic devices (CIEDs) is not clear and the appropriate treatment guidance in patients with AF episode does not establish. Recent CIEDs can detect subclinical AF episodes electrocardiographically. However, little is known about the incidence of AF and stroke events in Japanese patients with CIEDs.
Objective: The purpose of this study was to identify the incidence of stroke events in Japanese patients with and without AF detected by CIEDs. We hypothesized that the incidence of ischemic and bleeding stroke events is higher in patients with than without AF detected by CIEDs.
Methods: We analyzed retrospectively the database of our CIEDs clinic. AF burden and duration detected by CIEDs was checked every month using remote monitoring system.
Results: A total of 510 consecutive patients were enrolled in this study (follow-up period 84±69 months, age 70±16 years, male 72%, defibrillator 58%). Of those, 184 patients (36%) were clinically diagnosed AF. Two hundred twenty patients (43%) were prescribed anti-coagulation therapies. The mean of CHADS2 score and CHA2DS2-VASc score were 1.8±1.2 points and 3.0±1.5 points, respectively. The mean of HAS-BLED score was 1.8±1.2 points.
Two hundred four patients (40%) had AF detected by CIEDs, including 90 patients (18%) with subclinical AF. Forty two patients (1.9%/year) and 14 patients (0.4%/year) had ischemic stroke events with and without AF, respectively. Seven patients (0.8%/year) and 5 patients (0.3%/year) had bleeding stroke events with and without AF, respectively. Therefore, the incidence of ischemic and bleeding stroke events were 5.2 and 2.6 times higher in patients with than without AF, respectively.

Patient Characteristics and Major Events

(i) Patient characteristics

	N=510	Patients with AHRE (n=204)	Patients without AHRE (n=306)	P value
Age	70±16	71±12	69±14	0.46
Follow-up period (month)	84±69	88±42	81±14	0.06
Sex (male, %)	367 (72)	149 (73)	217 (71)	0.54
ICD (%)	296 (58)	110 (54)	184 (60)	0.03
AF clinically diagnosed (n(%))	184 (36)	114 (56)	67 (22)	<0.0001*
Anticoagulation therapy (n(%))	220 (43)	140 (69)	80 (26)	<0.0001*
CHADS2	1.8±1.2	2.4±1.3	1.6±0.9	0.005*
CHA2DS2-VASc	3.0±1.5	3.7±1.7	2.6±1.5	0.005*
HAS-BLED	1.8±1.2	2.2±1.4	1.6±1.3	0.054

ICD; implantable cardioverter defibrillator. * statistically significant

(ii) Major events

	N=510	Patients with AHRE (n=204)	Patients without AHRE (n=306)	P value
Ischemic stroke (n(%))	56 (11)	42 (21)	14 (4.5)	<0.0001*
Bleeding stroke (n(%))	12 (2.3)	7 (3.4)	5 (1.6)	0.88

Conclusions: Stroke events were common in patients with CIEDs. The incidence of stroke events was significantly higher in Japanese patients with than without AF in this population. Subclinical AF without clinical AF was associated with a significantly increased risk of ischemic stroke. The strict rhythm control, as well as optimal anticoagulation therapy, should be considered to reduce any stroke events in clinical practice.

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