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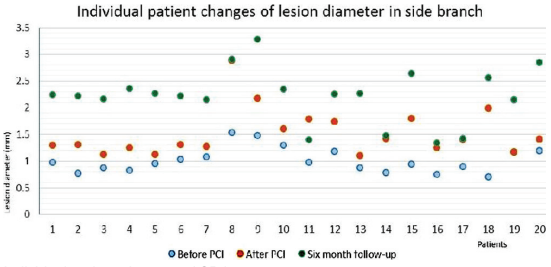
P5530

Drug-eluting balloon in the side branch of bifurcation lesions induces late lumen enlargement in the follow-up period

D. Gulin, E. Galic, J. Cerkez Habek, J. Sikic. *University Hospital "Sveti Duh", Department of Cardiovascular Diseases, Zagreb, Croatia.* On behalf of DEB-UP study group

Introduction: Interventions on bifurcation lesions (BL), with the prevalence of nearly 20% of coronary artery lesions, belong to the most complex procedures in interventional cardiology. Studies with drug-eluting balloon (DEB)-only strategy tested in small vessels, and less, but promising studies in bifurcation lesions, have shown good safety results, but mainly as non-inferior to drug-eluting stent. There are no many articles concerning the use of DEB in BL, some of them are registries and randomized studies, but altogether counting a small number of patients.
Purpose: DEB in true BL provides significant angiographic effect immediately, but more important significant late lumen enlargement in few months after percutaneous coronary intervention (PCI) of side branch (SB). Using DEB in the SB of BL simplifies not only the complexity of the PCI but also reduces the number of metals in the blood vessels which can reduce the most common adverse effect, restenosis and stent thrombosis.
Methods: This prospective observational single-center study, with six-month follow-up, included twenty patients with true BL affecting SB (Medina classification 1,1,1; 1,0,1; 0,1,1). Clinical and angiographic control (lesion diameter-LD), was obtained six months after the PCI. An everolimus-eluting stent was used in the main branch, while paclitaxel-eluting balloon was used in SB.
Results: The median value of the narrowest LD, in the whole group of patients, in the pre-treated SB was initially 0.97 mm, while immediate after intervention it was 1.36 mm (p=0.0001). At the six months F/U, the median value of the narrowest LD was 2.25 mm (p=0.0002). Total late lumen enlargement median was 0.9 mm (from late lumen loss of 0.39 to late lumen enlargement of 1.44 mm). Initial LD in SB was enlarged by 83% from PCI to follow-up. 66.8% of enlargement of LD was achieved in the follow-up period (Figure 1). All patients were free from target lesion revascularization, hospitalization due to chest pain or major adverse cardiac events.



Individual patient changes of SB lumen

Conclusions: The main result of our study is a significant improvement in SB narrowest lumen diameter achieved in next few months after PCI. The key of this technique, providing optimal treatment, is avoiding the two stents and upgrading the provisional old balloon angioplasty of side branch with DEB, achieving the distribution of the drug to the side branch vessel wall. Awareness of the active DEB function should be kept in mind. The whole DEB effect is achieved in months following the PCI and not immediately after PCI, as it is provided with stents. Adequate drug dispersion to the vessel wall is the main acute goal of PCI, while the drug effect is achieved later. By one stent technique, the phenomena of "metal as a problem" are minimized. Reducing the late lumen loss in SB has been shown in some studies. Our study demonstrates not only non-reduction in lumen diameter but provides new information about late lumen enlargement using DEB in SB.

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Prevalence of intact coronary arteries in patients with acute coronary syndrome

A. Tomashkevych, A.V. Solomonchuk, L.V. Rasputina, O.V. Scherbak, O.P. Didyk, A.S. Levanchuk, O.F. Bilonko, V.V. Rasputin, D.I. Grebeniuk. *Municipal institution "Vinnytsya Regional Center of Cardiovascular Pathology", X-ray unit, Vinnytsia, Ukraine*

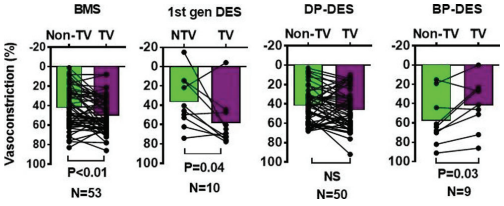
Relevance: Approximately 15–25% of routine coronary angiographies do not reveal atherosclerotic changes in the coronary arteries (CA). Absence of the atherosclerotic involvement of CA in patients with acute coronary syndrome often requires differential diagnostics with other diseases.
Objective: To assess the prevalence of intact coronary arteries (ICA) in patients, who were hospitalized with ACS.
Materials and methods: We analysed 1280 case histories of patients with ACS for the period of 2016–2017. Average age was 60.1±24.7 (men – 73.6%, women – 26.4%). Patients with STEMI – 1112, NSTEMI – 168.
Results: It was established, that ICA were determined in 116 patients (9.1%), average age 54.25. Among them 73 men, average age – 50,7 (62.9%) and 43 women, average age – 60,85 (37.1%). Patients with STEMI – 47 (40.5%), NSTEMI – 69 (59.5%).
Patients with ICA have had following diagnoses: Q-wave myocardial infarction – 6 (5.2%), non-Q-wave myocardial infarction – 7 (6.0%), myocarditis – 7 (6.0%), vasospastic angina – 41 (35.3%), pericarditis – 2 (1.7%), abnormal heart rhythms – 21 (18.1%), pathology of the heart valves – 10 (8.6%), intramural coronary artery course – 5 (4.3%), hypertrophic cardiomyopathy – 1 (0.9%), pathology of the aorta – 3 (2.6%), diagnosis of CAD was repealed – 35 (30.2%).
Patients with ICA, in the opposite to the patients with the atherosclerotic narrowing of CA, had: arterial hypertension – in 86 (74.1%), smoking – 47 (40.2%), obesity – 36 (31.0%), diseases of the gastrointestinal tract – 25 (21.6%), varicose veins of lower extremities – 22 (19.0%), diabetes mellitus – 3 (2.6%).
Summary: There were 116 (9.1%) patients with ICA among patients with manifestations of STEMI or NSTEMI. 13 (11.2%) have had the diagnosis of myocardial infarction. Differential diagnostics was required in 103 (89.8%) patients with the following diseases: vasospastic angina, myocarditis, pericarditis, arrhythmias, pathology of the heart valves, intramural coronary arteries course, hypertrophic cardiomyopathy, pathology of the aorta.

P5532

Biodegradable polymer drug-eluting stents are associated with better coronary endothelial function in stented vessels compared with non-target vessels in patients after coronary stenting

Y. Akiyama[1], T. Matoba[1], T. Uwatoku[2], Y. Mukai[2], S. Hayashidani[2], K. Ooi[2], H. Tsutsui[1]. *[1]Kyushu University Graduate School of Medical Sciences, Cardiology, Fukuoka, Japan; [2]Kyushu University Hospital, Cardiology, Fukuoka, Japan*

Background: Several studies have reported that implantation of 2nd generation drug-eluting stent (DES) preserves coronary endothelial function compared to 1st generation DES. However, no study has examined coronary responses to acetylcholine in distal stented target vessel (TV) in comparison to non-TV in each patient. The aim of this study was to test the hypothesis that newer generation DES are associated with less vasoconstrictive responses in TV compared with non- TV in patients after coronary stenting.
Methods: We retrospectively evaluated 122 subjects who underwent percutaneous coronary intervention (PCI) with stent implantation in one branch of the left coronary arteries from 2006 to 2013. (BMS; n=53, 1st Gen DES; n=10, and 2nd Gen DES including Durable Polymer (DP)-DES; n=50, and Biodegradable Polymer (BP)-DES; n=9) All patients underwent follow up CAG 6–8 months after stenting, after at least 48 hours cessation of coronary dilators. Baseline coronary angiography was continued after the administration of incremental doses of intracoronary ACh (10 μg, 30 μg, and 100 μg) in left coronary artery. Coronary vasoconstriction were measured in the distal non-stenotic segment at the end-diastole with Quantitative Coronary Angiography (QCA), in reference to diameters after ISDN.
Results: Acetylcholine-induced vasoconstriction in the TV was significantly larger compared to non-TV in patients treated with BMS (50% vs. 42%, p=0.002, paired t-test) and 1st generation DES (58% vs. 36%, p=0.04). Late lumen loss (LLL) was associated with coronary vasoconstrictive responses in TV with BMS. Vasoconstriction of TV was comparable in patients with 2nd generation DP-DES (46% vs. 41%, p=0.08), and was less in patients with 2nd generation BP-DES (41% vs. 57%, p=0.024).



Conclusions: 2nd generation DES did not cause coronary hyperconstriction in stented TV compared to non-TV within each subject. This results suggest BP-DES is associated with better re-endothelialization than other types of stent. In the TV with BMS, LLL was associated with acetylcholine-induced coronary hyperconstriction.

P5533

Impact of thrombus aspiration and Glycoprotein IIb/IIIa inhibitor between new antiplatelet agents and clopidogrel in patients undergoing primary percutaneous coronary intervention

J.H. Lee, B.E. Park, Y.J. Park, H.N. Kim, N.K. Kim, J.H. Song, S.Y. Jang, M.H. Bae, D.H. Yang, H.S. Park, Y. Cho, S.C. Chae, M.H. Jeong. *Kyungpook National University Hospital, Daegu, Korea Republic of.* On behalf of Korean Acute Myocardial Infarction Registry (KAMIR) – National Institute of Health (NIH)

Background: It remained uncertain about the combined efficacy of thrombus aspiration and Glycoprotein IIb/IIIa inhibitor (GPI) on long-term clinical outcome in the new antiplatelet era.
Purpose: To investigate the impact of thrombus aspiration with or without GPI in patients undergoing primary percutaneous coronary intervention (PCI).
Methods: We examined 6,054 patients who underwent primary PCI from the Korean Acute Myocardial Infarction Registry (KAMIR) – National Institute of Health