



Artery Research

ISSN (Online): 1876-4401

ISSN (Print): 1872-9312

Journal Home Page: <https://www.atlantis-press.com/journals/artres>

P5.21: PERCUTANEOUS CORONARY INTERVENTIONS OF CHRONIC TOTAL OCCLUSIONS: GENDER DIFFERENCES – SINGLE CENTER EXPERIENCE

Leszek Bryniarski*, Slawomir Surowiec, Lukasz Klima, Michal Terlecki, Piotr Jankowski, Marek Rajzer, Piotr Kusak, Tadeusz Krolikowski, Adam Curylo, Dariusz Dudek, Danuta Czarnecka

To cite this article: Leszek Bryniarski*, Slawomir Surowiec, Lukasz Klima, Michal Terlecki, Piotr Jankowski, Marek Rajzer, Piotr Kusak, Tadeusz Krolikowski, Adam Curylo, Dariusz Dudek, Danuta Czarnecka (2015) P5.21: PERCUTANEOUS CORONARY INTERVENTIONS OF CHRONIC TOTAL OCCLUSIONS: GENDER DIFFERENCES – SINGLE CENTER EXPERIENCE, Artery Research 12:C, 24–25, DOI: <https://doi.org/10.1016/j.artres.2015.10.284>

To link to this article: <https://doi.org/10.1016/j.artres.2015.10.284>

Published online: 7 December 2019

In conclusion, carPP values obtained with the accelerometric device are in good correlation with those calculated with standard applanation tonometry. Therefore, the proposed approach, providing an easier and more available measurement, could represent a valid alternative to existing and used technique for carPP assessment.

P5.18

TRANSRADIAL APPROACH FOR VERTEBRAL ARTERY STENTING: SINGLE-CENTER EXPERIENCE

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Objectives: Transradial vertebral artery (VA) angioplasty might be a viable alternative to the transfemoral approach in cases of peripheral artery disease or anatomical variations of the aortic arch. The purpose of our study was to evaluate the safety and efficacy of transradial stenting of symptomatic VA stenosis.

Material and methods: Seventeen patients [67±8,4 years, 76% men, with >80% stenosis, 13 right-side, all symptomatic from posterior circulation (history of stroke, TIA or chronic ischemic symptoms)] with peripheral artery disease (PAD) or unsuccessful attempt via femoral access were scheduled for VA angioplasty by radial approach. Clinical and duplex ultrasound (DUS) follow-up were performed before discharge and 6, 12 and 24 months after VA stenting.

Results: The technical success rate was 100%. In all cases VA angioplasty was performed with the use of single balloon-mounted stent (11 bare metal stents, 6 drug eluting stents). The mean NASCET VA stenosis was reduced from 87,5% to 5,9% (p<0.001). No periprocedural death, stroke, myocardial infarction or transient ischemic attack occurred. During 24-months follow-up in 14 of 17 patients chronic ischemia symptoms release was observed, no new acute ischemic neurological symptoms were diagnosed in all patients. One patient died 20 months after intervention from unknown cause. There was one, symptomatic border-line VA in-stent stenosis 12 months after angioplasty.

Conclusion: Transradial VA stenting may be effective and safe procedure and it may constitute an alternative to femoral approach in patients with symptomatic vertebral artery stenosis.

P5.19

TRANSRADIAL APPROACH FOR CAROTID ARTERY STENTING: SINGLE-CENTER EXPERIENCE

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Objectives: The transfemoral approach is commonly used for carotid artery stenting (CAS) however in cases of severe peripheral vascular disease or unfavorable aortic arch anatomy, the transradial access remains a viable alternative. We report a series of patients with aorto-iliac disease or unsuccessful attempt via femoral access in whom transradial carotid artery stenting was performed.

Material and methods: Sixteen patients (69±10,7 years, 75%men, with >70% stenosis, 10 left-side, 5 contralateral carotid occlusion, 9 with history of stroke or TIA) with peripheral artery disease (PAD) or unsuccessful attempt via femoral access were scheduled for carotid artery angioplasty by radial approach. Clinical and duplex ultrasound (DUS) follow-up were performed before discharge and 1, 12 and 24 months after carotid artery stenting.

Results: The technical success rate was 87,5%. In two cases attempt via femoral and radial access were unsuccessful and the patients were treated by endarterectomy. In other cases CAS was performed with self-expanding bare metal stents. The mean NASCET carotid artery stenosis was reduced

from 85% to 9,6% (p<0.001). No periprocedural death, stroke, myocardial infarction or transient ischemic attack occurred. During 24-months follow-up no new acute ischemic neurological symptoms were diagnosed in all patients. One patient died 2 months after intervention due to deterioration of chronic obstructive pulmonary disease.

Conclusion: Transradial carotid artery stenting may be safe and useful alternative when femoral approach is difficult or impossible.

P5.20

MEASURE OF CHANGE IN CAROTID-RADIAL PULSE WAVE VELOCITY AFTER REACTIVE HYPERAEMIA

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The recognized reference method for endothelial function assessment is brachial artery diameter echo-tracking during flow mediated dilation (FMD) induced by reactive hyperaemia (RH). From the Mons-Korteweg equation, FMD should also reduce upper limb pulse wave velocity (PWV). The aim of our study was to compare echo-tracking FMD with PWV changes after RH. Brachial diameter was assessed by echo-tracking (MyLab 70, Easote, Italy) before and after 7 min of ischemia induced by inflating a cuff on the right wrist 50mmHg above subject's systolic blood pressure. Carotid-left radial and carotid-right radial PWVs were also simultaneously measured with Complior Analyse (Alam Medical, France) at baseline (in triplicate), 30sec, 1, 3 and 5 min end of ischemia.

Measurements were performed in 15 healthy subjects (10M/5F, 31±11 yrs). Maximum PWV changes happened 1min after cuff deflation in the ischemic arm (Δ PWV=2,1±1,4m/s, p<0,001) while changes in the control arm were non-significant.

Time after deflation Δ PWV ischemic arm Δ PWV control arm

30sec -0,6 ± 0,6 -0,2 ± 1,0

1min -2,1 ± 1,4 * -0,1 ± 1,1

3min -1,9 ± 1,4 * -0,1 ± 1,2

5min -1,7 ± 1,3 -0,7 ± 2,5

*p<0,001

The maximal change in arterial diameter post-RH was 5,1±4,7%. There was no correlation between diameter change and Δ PWV (R=0,03, p=0,91).

While the use carotid-radial PWV seems promising to track changes post RH, further studies are needed to better understand this phenomena which is not related to diameter change.

P5.21

PERCUTANEOUS CORONARY INTERVENTIONS OF CHRONIC TOTAL OCCLUSIONS: GENDER DIFFERENCES – SINGLE CENTER EXPERIENCE

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Background: Little is known about gender differences among patients undergoing percutaneous coronary intervention (PCI) for chronic total occlusion (CTO).

Methods: A total of 242 patients underwent 255 procedures PCI of CTO in our center between January 2011 and January 2015. Demographic data, procedural differences and success rate between genders was compared.

Result: Among 242 treated patients 16,9% (n=41) were women. Women were older than men (67.8±8.4 vs. 61.3±9.0, p<0.005, respectively). There were no differences in diagnosis of hypertension (92.7% vs. 85.6%), dyslipidaemia (100% vs. 99%) or diabetes (34.2% vs. 28.4%)(p=NS). Less women were current smoker (7.3% vs. 23.4%, p<0.005). 46.1% of women and 50.8% of men suffered from myocardial infarction before procedure (p=NS). The most frequently opened artery in both groups were right coronary artery (45.2% vs. 49.8%), then left anterior descending artery (40.5% vs. 31.5%) (p=NS). Occlusion's characteristic did not differ in both groups in estimated duration (10.9±19.5 vs. 16.6±33.1 months) and length (27.0±14.0 vs. 26.9±11.8 mm), (p=NS). Retrograde technique was used in 10 women (23.8%) and in 46 men (21.6%) (p=NS). Time of procedure (minutes) (71.4±27.9 vs. 69.3±33.4), fluoroscopic time (minutes) (25.7± 15.2

vs. 26.9 ± 18.4) and contrast volume (ml) (370.8 ± 170.2 vs. 348.3 ± 156.7) did not differ between women and men ($p = NS$ for all). Overall success rate was 86.7%, in women 80.9% and in men 87.9% ($p = NS$).

Conclusion: PCI of CTO remains safe and successful method of revascularization in men and women. However, women were a significant minority. Although women are older, success rate of revascularization and complications were similar compared to men.

P6.1

DIURNAL CHANGES IN PULSE PRESSURE AMPLIFICATION IN NORMOTENSIVE, HYPERTENSIVE DIPPER AND HYPERTENSIVE NON-DIPPER PATIENTS

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Office central blood pressure (cBP) have been shown to better predict cardiovascular events than standard peripheral pressure. With Vasotens software and BPLab monitor (OOO Petr Telegin, Russia) is now possible to estimate central pressure over 24h. However to date, no data have shown that 24h monitoring cBP have added value to office measurements. We looked at diurnal changes in pulse pressure amplification (PPamp=peripheral pulse pressure/ central pulse pressure) cBP and PWV in 120(60M/60F) normotensives (NT), 120(60M/60F) hypertensive dippers (DI) and 120(60M/60F) hypertensive non-dippers (ND) matched for age, sex and day brachial SBP for the hypertensive subjects.

Between day and night, peripheral systolic blood pressure fell from 122 ± 8 to 103 ± 7 , from 140 ± 11 to 117 ± 11 and from 140 ± 12 to 137 ± 14 mmHg in NT, DI and ND respectively. Heart rate fell from 70 ± 8 to 59 ± 7 bpm in NT, from 77 ± 10 to 63 ± 8 bpm in DI and from 73 ± 12 to 65 ± 11 bpm in ND. Day PPamp was slightly higher in DI than other groups ($132 \pm 7\%$, $135 \pm 8\%$, $131 \pm 9\%$ in NT, DI and ND respectively, $p < 0.001$ ANOVA). Night PPamp was lower but did not vary between groups ($123 \pm 7\%$, $124 \pm 6\%$ and $123 \pm 7\%$, $p = 0.11$). However PPamp was correlated with HR ($R^2 = 0.36$). After correction for HR changes, PPamp did not differ during day and night.

Once corrected for HR, diurnal variations of central pressure seems to be in parallel to peripheral blood pressure whatever is the hypertensive or dipping status.

P6.2

AORTIC-TO-BRACHIAL STIFFNESS GRADIENT INDEPENDENTLY PREDICTS KIDNEY FUNCTION: CASE-CONTROL COMPARISON BETWEEN PATIENTS WITH TYPE 2 DIABETES AND NON-DIABETIC CONTROLS

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Background: A negative aortic-brachial stiffness gradient (ab-SG), whereby aortic pulse wave velocity (aPWV) \geq brachial PWV (bPWV) predicts mortality independent of aPWV in dialysis patients. Patients with type 2 diabetes mellitus (T2DM) have increased risk of renal damage and exhibit haemodynamic abnormalities that may alter ab-SG. This study aimed to determine if there were differences in ab-SG among patients with T2DM compared with non-diabetic controls, and also to determine associations between ab-SG, aPWV and kidney function.

Methods: 60 patients with T2DM and 60 age- and sex-matched non-diabetic controls (58 ± 8 years, 55% male both) had ab-SG measured by applanation tonometry, with ab-SG defined as the quotient of bPWV (carotid-to-radial) and aPWV (carotid-to-femoral). Kidney function was assessed by estimated glomerular filtration rate (eGFR).

Results: ab-SG was significantly lower in patients with T2DM (0.99 ± 0.2 versus 1.2 ± 0.3 , $p < 0.001$) and aPWV, but not bPWV, was significantly higher ($p < 0.001$, $p = 0.25$). 58% of patients with T2DM versus 27% of non-diabetic controls ($\chi^2 = 11.0$, $p < 0.001$) had negative ab-SG (aPWV \geq bPWV). ab-SG predicted eGFR in the entire cohort independent of age, sex, T2DM status and cardiovascular risk factors ($\beta = 17.0$, $p = 0.005$), whereas

aPWV was a weaker correlate of eGFR ($\beta = -0.15$, $p = 0.22$). Independent predictors of ab-SG were brachial and central pulse pressure ($\beta = -0.008$, $p = 0.005$; $\beta = -0.007$, $p = 0.027$) for patients with T2DM and heart rate ($\beta = -0.012$, $p = 0.007$) and brachial pulse pressure ($\beta = -0.012$, $p = 0.026$) for non-diabetic controls.

Conclusions: Patients with T2DM have reduced (negative) ab-SG. In the entire cohort, ab-SG predicted kidney function independent of aPWV, implying that negative ab-SG may have a pathophysiological function.

P6.3

PLATELET ACTIVITY IN TEEN GIRLS WITH PRIMARY ARTERIAL HYPERTENSION

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Keywords: Primary arterial hypertension, platelet activity

Objective: Primary arterial hypertension (PAH) – a multifactorial disease. Its etiology, especially in children, still causes a lot of questions and diagnostic tests are not common in clinical practice. Even less is known of the variation in platelet activity in adolescents with PAH, this study was the assessment of platelet activity in healthy subjects and patients with PAH in groups of 17-18 year old girls.

Materials and methods: Platelet functional activity was determined by flow cytometry. Platelets used to identify the three antibodies: CD42a (GP IX), CD41a (GP IIb) and CD61 (GP IIIa) and assessing the activity of select PAC-1 antibody that binds specifically to activated GPIIb / IIIa complex. Through 2008-2013 years platelet activity was assessed 31 with primary arterial hypertension 17-18 year old girl (case group) and 33 healthy girls (control group). A statistical analysis was done and the significance assessed by a X-square test. The statistical difference was considered significant if the p value was below 0.05.

Results: Teen girls with PAH group hasn't statistically significantly more platelets (both percentage and absolute terms) that joined the PAC-1 antibody. We can not say that suffering from PAH girls, have an increased platelet activity. **Conclusions:** The girls, who have PAH, functional platelet activity has not differ from healthy. But perhaps it should be more research sample, and it should involve risk factors.

P6.4

PLATELET ACTIVITY IN TEENAGE BOYS WITH PRIMARY ARTERIAL HYPERTENSION

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Keywords: primary arterial hypertension, platelet activity

Objective: Primary arterial hypertension for teen has caused a lot of debate today, there is too much uncertainty about platelet functional changes in patients with PAH. The objective was to evaluate platelet activity in healthy and suffering from PAH groups of 17-18 year old boys.

Materials and methods: Platelet functional activity was determined by flow cytometry. Platelets used to identify the three antibodies: CD42a (GP IX), CD41a (GP IIb) and CD61 (GP IIIa) and assessing the activity of select PAC-1 antibody that binds specifically to activated GPIIb / IIIa complex. Through 2008-2013 years platelet activity was assessed 38 PAH 17-18 year-old boys (case group) and 41 healthy the same age teenager (control group). A statistical analysis was done and the significance assessed by a X-square test. The statistical difference was considered significant if the p value was below 0.05.

Results: In PAH group of teen boys were not found statistically significantly more PAC-1 antibody attached platelets. Based on the results of this study we could argue that the platelet functional activity of PAH teens is not higher than in healthy adolescents.

Conclusions: PAH teen platelet functional activity does not differ from healthy peers. To obtain accurate results, it should be performed at a higher sample survey.