

Abstract 0195-Table

	ET		ET+EMS	
	Baseline	End of program	Baseline	End of program
Musc Circumf (cm)	43.0±4	43.8±4	44.7±5	43.0±4
Musc Strength (kg)	23.4±10	30.5±14	23.7±11	29.9±14
CPK (UI/l)	103.1±83	138.1±153	101.4±81	99.6±68
LDH (UI/l)	239.1±100	257.0±1089	255.3±124	257.4±132
Aldolase (UI/l)	4.7±2	4.8±3	4.5±2	4.1±2
Myoglobin (µg/l)	52.0±36	84.5±169	52.3±26	53.4±44

0354

Kinetics of regional myocardial strains at the onset of dynamic exercise

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In cardiac diseases or healthy aging, the oxygen uptake kinetics are limited by muscle O₂ delivery, which directly depends of the response of the cardio-respiratory system at the onset of exercise. However, data regarding cardiac adaptation during the transition from rest to exercise are limited to heart rate, stroke volume and cardiac output. Today, new advances in echocardiography based on speckle tracking enables an evaluation of regional left ventricular (LV) strains. In this context, we aimed to evaluate the kinetics of regional LV strains at the onset of dynamic exercise. 25 young adult males (23 ± 4 years) were recruited. Each subject performed five similar 4-min constant-load exercises on a dedicated ergometer in a semi-supine position. The five tests were used to record 2D cine loops from different echocardiographic views every 15 sec during the first minute, and then every 30 sec. Stroke volume (SV) was assessed using a Pedof and longitudinal strain (LS) and circumferential strain (CS) at the base and the apex using speckle tracking. The major findings of the study indicated that, at the onset of exercise, the adaptations of SV and LV strains were very fast since they achieved their maximal response between 30 and 60 sec. Increase in LS and CS strains was higher at the apex compared to the base (-30 ± 5% vs -19 ± 3% for LS and -32 ± 6% vs -21 ± 4% for CS) underlining the key role of the apex at the onset of dynamic exercise. In conclusion, the present study presents original data regarding the transient response of LV strains at the onset of exercise in healthy subjects. Using such methodology, further studies will be needed to characterize these dynamic adaptations during the transition from rest to exercise in patients under various diseases such as heart failure, diabetes or obesity

0010

Adherence to antiplatelet after acute coronary syndrome

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Background: Current guidelines recommend the use of Dual antiplatelet therapy (DAT) aspirin and a thienopyridine, such as clopidogrel or prasugrel or ticagrelor, for 12 months after an acute coronary syndrome (ACS). Limited information is available on medication adherence especially on prasugrel and ticagrelor.

Aims: Comparison of the patient adherence to these 3 recommended treatments. A secondary objective was to identify risk factors of non-adherence to each treatment.

Methods: We conducted a retrospective observational study on patients admitted for ACS in two cardiology care units of the west of France (a) (b)

between 1/10/2012 and 01/10/ 2013. Patients were grouped according to the DAT in 3 groups: clopidogrel, prasugrel and ticagrelor. Medication adherence was assessed by telephone interview, with a validated scale, after at least 6 months of treatment. The treatments' side-effects were also appraised.

Results: From a total of 1077 patients with a ACS, 335 surviving patients with usable response were included. The median follow-up was 9 months. 119 patients in clopidogrel group, 123 patients in prasugrel group and 93 patients in ticagrelor group were included. A non-adherence was noted in 19% of the cohort group. A significant difference in non-adherence was noted between clopidogrel (13 %), prasugrel (18 %) and ticagrelor (27 %) (p = 0.05). Younger age (< 50 years old) (OR 10, 65; p < 0.001) and minor hemorrhage (OR 2.495; p= 0.009) were independent risk factors of non-adherence for each treatment. In Clopidogrel group, the predictors of non-adherence were hypercholesterolemia (OR 3.02; p = 0.01), and major digestive hemorrhage (OR 33; p 0.009). In Prasugrel group, patients with high blood pressure (OR 6.77; p=0.007); or with a high number of medications were statistically associated with non-adherence (OR 3.41; p= 0.04). In Ticagrelor group, minor hemorrhage (epistaxis, gingivorrhagia.. .) were also associated with non-adherence (OR 5.17; p= 0.05)

Conclusion: After ACS, non-adherence to antiplatelet treatments was observed in about 1 out of 5 patients with significant difference between the different drugs in this non randomized study. Younger ages, higher number of total medications, and side effects such as minor hemorrhage were associated with non-adherence.

0301

Effects of low and high polyphenols content lettuces consumption on high fat diet induced metabolic syndrome and endothelial dysfunction

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Consumption of vegetables has been recommended to reduce the risk of cardiovascular disease. The protection against disease is partly due to bioactive molecules including polyphenols. In order to evaluate the effects of such polyphenols, we supplemented High Fat diet rats with low and high polyphenolic content lettuces. 32 Wistar rats were divided in 4 groups, a control group (Ctrl), a high fat and sucrose diet group (HFS, 60% fat+10% sucrose) and 2 groups that after 6 weeks of HFS diet were supplemented 8 weeks with both HFS diet and either a low or high polyphenol content lettuces (HFS-LP; Blond Oak Leaf, 30g/day vs. HFS-HP; Red Oak Leaf, 30g/day). After 14 weeks of HF diet including 8 weeks of supplementation, we performed a glucose tolerance test and an evaluation of arterial blood pressure (BP) by tail cuff method. Then, aortic endothelial function and eNOS dependent vasodilatation were evaluated ex vivo on isolated rings. Firstly, we observed a higher body weight in HFS group (502±21g) compared to Ctrl group (417±14g) without any effect of both supplementations. Regarding glycemic control, HFS group presented increased fasting blood glucose (1.37g/l vs. 1.20g/l) as well as an impairment of glucose tolerance. Interestingly, both groups with lettuces intake displayed healthy fasting blood glucose values (1.14g/l and 1.15g/l) and an improvement of glucose tolerance. Moreover, both lettuces treatments

managed to normalize the increase in mean BP observed in HFS group (HFS; 131mmHg; HFS-LP 120 mmHg; HFS-HP, 117mmHg). However, no effect of lettuce consumption was observed on endothelial dysfunction and impaired eNOS dependent vasodilatation observed in HFS rats. In conclusion, we observed in this study a major effect of lettuce intake on glycemic control as well as arterial BP. However, no effect regarding the difference in polyphenols content has been reported here underlying that the effects were independent of the specific polyphenols contained in the HP lettuce.

0229

Effect of exercise training on crosstalk between vascular and perivascular adipose tissue: preliminary results

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Perivascular adipose tissue (PVAT) surrounds blood vessels and is considered as active endocrine organ which interact with endothelium and vascular smooth muscle cells in a paracrine way. Exercise training is widely

known to modulate vascular function, and despite exercise has been also demonstrated to alter subcutaneous or visceral adipose tissue phenotype, the link between adipose tissue and vasomotor function in this context has never been challenged. Thus, the aim of our study was to explore whether the impact of exercise training on PVAT contributes to its effect on arterial function. Rats were exercised (40min/day 5 days/week for 5 weeks) or not. Aortic tissue was isolated and PVAT surrounded aorta excised and incubated for 30min before the isometric tension studies in Krebs solution (PVAT-incubated solution). Vasoreactivity to phenylephrine and acetylcholine was assessed on isolated aortic rings in presence or not of PVAT-incubated solution. Since, the presence or not of the vessel during the incubation of the PVAT could contribute to explain some discrepancy in the literature, we incubated PVAT in presence or not of the aortic tissue. Whatever the conditions, in sedentary rats, PVAT exacerbated the contractile response to phenylephrine and reduced the vasodilatory response to acetylcholine. An interesting point was that when the procedure was applied in aortic tissue and PVAT of exercise trained rats, both the pro-contractile effects and the anti-vasorelaxant effect of PVAT were blunted. In conclusion, we demonstrated here that moderate exercise training was able to limit the deleterious effect of PVAT on arterial vasoreactivity. These results could be attributed to effects of exercise either on aortic wall or on the endocrine function of PVAT. Both will be next explored (aortic sensitivity to phenylephrine and to acetylcholine, eNOS activation state and proteome profile of adipokines secreted by PVAT) and will be presented during the congress.