those who did not do any exercise before being referred to the Cardiac Rehabilitation Program.

Results: 32 men (mean age 67±11 yrs), 20 were hypertensives, 8 had diabetes, only 3 patients were currently smoking. There was no change in the mean arterial pressure, pulse pressure or large artery compliance. There was significant improvement in the small artery compliance. This became insignificant when those who were following intense exercise program were added. Endothelial dysfunction plays an important role in the pathogenesis of coronary artery disease. We speculate that endothelial function improves with comprehensive cardiac rehabilitation program in deconditioned men. Further studies are needed to test this hypothesis.

Conclusion: A comprehensive cardiac rehabilitation program improves the small artery compliance significantly in deconditioned male patients with coronary artery disease. This improvement becomes insignificant when those who were following intense exercise program were added. Endothelial dysfunction plays an important role in the pathogenesis of coronary artery disease. We speculate that endothelial function improves with comprehensive cardiac rehabilitation program in deconditioned men. Further studies are needed to test this hypothesis.

Key Words: arterial compliance, coronary artery disease, exercise

P-300
EARLY RENAL DAMAGE AND COLLAGEN METABOLISM DETERMINES ARTERIAL STIFFNESS IN DIABETIC HYPTERTENSIVES
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The purpose of the present study was to analyse the differences in large artery stiffness, microalbuminuria and plasma collagen markers between diabetic and non diabetic hypertensives. Study population consisted of 98 patients (55 women and 43 men, age 56.1±9.3 years) with mild to moderate primary arterial hypertension. Group 1 (N = 35) with diabetes mellitus t2 on oral agents (duration of diabetes 8.2±4.3 years), and Group 2 (N = 63) without diabetes. Standard BP measurements, 24-h ambulatory blood pressure monitoring (ABPM) SpaceLabs 90207, carotid-femoral pulse wave velocity (PWV) using automatic Compilor® device were performed. Microalbuminuria was defined as 30-300 µg / 24h. Plasma collagen markers C-(PICP) and N-terminal (PINP) peptides were obtained using RIA kits (Orion Diagnostica). Statistical analysis was performed using Statistica 5.1 (StatSoft Inc.). Between group differences are shown in the table. No significant differences between group G-1 and G-2 were observed for SBP and DBP in standard measurements: SBP (147±8.5 vs. 141±10.5 mmHg) and DBP (93±6.2 vs. 89±7.7 mmHg) as well as for 24h-ABPM.

In the multiple regression model for diabetic group at R=0.71 PWV was significantly related to age (B=0.471, p=0.0012), PICP concentration (B=0.976, p=0.002) and presence of microalbuminuria (B=0.213, p=0.024). Among non diabetic hypertensives at R=0.53 PWV was significantly related to age (B=0.421, p=0.012) and SBP in 24h-ABPM (B=0.397, p=0.023).

P-301
MONITORING COMPLIANCE FOR PATIENTS ON ANTIHYPTERTENSIVE MEDICATION WITH THE NEW INSTRUMENT OF COMPLIANCE PRAXIS SURVEY (COMPASS)
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Low compliance is suspected as a major reason for treatment failure in hypertensive patients. To identify patients with low compliance at the commencement of antihypertensive treatment, the compliance praxis survey (COMPASS) was utilised. A total of 161 physicians identified 2389 hypertensive patients treated by ACE-inhibitor. The physicians rated the compliance of the patients at baseline and at 6-month follow-up prospectively. Standard care was given. The mean age of patients was 64.5 years (54.4% women). The baseline overall score of compliance was medium to high in 97.3% of patients. A quarter of all patients (24.7%) were described as having difficulties to follow lifestyle changes, 22.3% lacked sufficient social support and 31.0% were unwilling to obtain additional information about illness and treatment. Patients who had received prior treatment for cardiovascular disease were less compliant than those who received first treatment within this study (P=0.05), Younger (P<0.01), male patients (P<0.01), and those without prior cardiovascular disease (P<0.001) were significantly more likely to stop the antihypertensive treatment without a doctor’s recommendation. Doctors’ rating of compliance at baseline correlated well with ongoing treatment at 6-month follow-up. In conclusion, the COMPASS survey questionnaire is a useful instrument for doctors to differentiate between patients who lack resources and to then counsel patients based on their individual needs.

Key Words: compliance, compliance estimates, lifestyle

P-302
METABOLIC SYNDROME AMPLIFIES THE AGE-ASSOCIATED INCREASES IN VASCULAR THICKNESS AND STIFFNESS
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Background: Intimal medial thickness (IMT) and vascular stiffness have been shown to be independent predictors of adverse cardiovascular events. The metabolic syndrome (MS) is defined as the clustering of 3 or more of the cardiovascular risk factors of dysglycemia, hypertension, dyslipidemia, and obesity. We sought to evaluate whether the clustering of multiple components of the MS has a greater impact on these vascular parameters than individual components of the MS.

Methods and Results: Carotid arterial IMT and stiffness were derived via B-mode ultrasonography in 471 participants from the Baltimore Longitudinal Study on Aging who were without clinical cardiovascular disease and not on antihypertensive therapy. MS conferred a disproportionate increase in carotid IMT (+16%, p<0.0001) and stiffness (+32%, p<0.0001) compared to controls, and predicted simultaneous excessive
increases in both IMT and stiffness. Multiple regression models which included age, gender, smoking, LDL as well as each individual component of the MS considered as continuous variables (abdominal circumference, triglycerides, HDL cholesterol, fasting glucose, systolic and diastolic BP), showed that the MS was an independent predictor of stiffness (p=0.01) but not of IMT (p=0.08), whereas the full MS (defined as the presence of all 5 components of the MS) was an independent predictor of both IMT (p=0.01) and stiffness (p=0.01).

Conclusion: Even after taking into account each individual component of the MS, the clustering of 3 of these components is an independent predictor of vascular stiffness, and the clustering of all 5 is an independent predictor of both vascular stiffness and IMT. Thus, clustering of the components of the MS has a synergistic detrimental effect on these vascular properties, and the greater the number of components in the cluster the more pronounced the effect. Future studies should examine whether the excess cardiovascular risk associated with the MS is, in part, mediated through the accelerated alterations in these vascular properties.

Key Words: Metabolic syndrome, carotid artery, aging

P-303
THE EFFECT OF ULTRAFILTRATION VOLUME DURING HEMODIALYSIS ON THE ELASTIC PROPERTIES OF THE AORTA IN PATIENTS ON CHRONIC RENAL FAILURE
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Aortic distensibility (AoD), an important parameter of left ventricular function is reduced in patients (pts) with end-stage chronic renal failure (CRF) and is known to improve by hemodialysis (HD). The aim of the present study was to evaluate the effect of dialysis ultrafiltration volume on the elastic properties (EP) of the aorta in pts with CRF and different retention volumes. Twenty nine pts (16 men and 13 women, aged 44 ± 15 years), on regular chronic HD for more than one year, were studied. The AoD was measured before and at the end of the same HD session. All pts were on bicarbonate HD, received erythropoietin and did not smoke. Patients were divided into two groups: group I: pts who came on HD with < 2Kg over their dry weight, group II: pts who came on HD with ≥ 2 Kg over their dry weight. No differences were observed between the two groups regarding: age, sex, hematocrit, serum creatinine, cholesterol, triglycerides, HDL-C, LDL-C, Apo A, Apo B, Lp (a), systolic and diastolic blood pressure in the pre and post HD measurements. The AoD was calculated by the formula: AoD = 2π (S-D)/(DxPP) where S is the systolic and dyhmeters the diastolic aortic pressure and PP the pulse pressure. The aortic were evaluated with the m-mode in the parasternal long axis view. Pressures were obtained by sphygmonanometry at the branchial artery. The difference of AoD (cm²x dyn⁻¹ x 10⁻⁶) in group I was 1.15 ± 0.47 and in group II 0.54 ± 0.51. The comparison between the changes of AoD in the two groups showed a statistically significant difference (student’s t-test, p=0.0003). The above results were confirmed by the Mann-Whitney test (p=0.002). From our results it is concluded that the effect of HD on the EP of the aorta is more favourable in pts who retain less than two kilos of fluid between two HD sessions. The mechanisms as well as the short and long term hemodynamic consequences of this effect need further evaluation.

Key Words: ultrafiltration volume, hemodialysis, elastic properties

P-304
INFLUENCE OF CALCINEURIN INHIBITOR FREE IMMUNOSUPPRESSION ON CAROTID INTIMA MEDIA THICKNESS IN CHRONIC ALLOGRAFT NEPHROPATHY
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Cardiovascular (CV) morbidity and mortality influences long-term patient and allograft survival after kidney transplantation. The intima media thickness of the A. Carotis communis (IMT-CC) is severely impaired in renal transplant recipients (RTX). This parameter of vascular structure is an accepted predictor of cardiovascular complications and may be influenced adversely by calcineurin-inhibitors (CNI). However, it is not known whether withdrawal of CNI and addition of MMF in RTX may improve structural properties of the large arteries. Therefore we studied the evolution of the carotid IMT after CNI withdrawal and replacement with mycophenolate mofetil (MMF) over a period of 9 months.

In a prospective study longterm RTX (n=32, age: 48±2 years, 7±0.5years after TX!) with histologically proven chronic allograft nephropathy were randomized to either withdrawal or continuation of CNI therapy after addition of MMF in both groups. Prednisolone was continued in both groups. Using a high resolution B-mode ultrasound-system (Biosound 2000 II s.a., Biosound Inc., Indianapolis, USA) with a 8 MHz transducer) the IMT-CC of the far wall was measured by a standardised protocol. Enddiastolic (ECG triggered) vessel diameter and the atherosclerotic plaquescore were measured at baseline and about 9 months later. Results are shown in table 1. Data are mean ± SEM. * p<0.05 A vs B.

The changes of 1/creatinine and in pulse pressure (DPP) were significant between the groups. Course of IMT was significantly influenced by DPP only (stepwise multiple regression). Even in longterm RTX with high CV-risk, CNI-withdrawal in combination with additional antiproliferative immunosuppressive agents like MMF significantly improved carotid IMT, plaquescore and vessel wall diameter as compared to CNI continuation This finding may be associated with a possible reduction of cardiovascular risk. This effect is partly attributable to pulse pressure changes.

Key Words: Intima Media Thickness, Calcineurin inhibitor, Kidney transplantation

P-305
THE SPECTRUM OF LARGE AND SMALL VESSEL CHANGES IN A MODEL OF DEVELOPING HUMAN HYPERTENSION (HTN)

HTN after liver transplantation (LTx) reflects a transition from splanchnic and systemic vasoconstriction to widespread vasoconstriction. How this transition affects large and small vessel compliance is not well understood. We studied hemodynamic and arterial changes in end stage liver disease (ESLD), as compared to NI subjects and to hypertensive LTx 1-2 yrs after LTx using tacrolimus-based immunosuppression.