**Aim of the study**: This study was designed to test if spiral CTA is associated with increased risk of contrast nephropathy in high-risk patients with renal insufficiency.

**Patients and methods**: We prospectively studied 43 patients with chronic renal insufficiency (serum creatinine >140 μmol/L), who were undergoing an spiral CTA for evaluating renal artery stenosis. Twelve patients (28%) had diabetes mellitus and renal failure. A monomeric, nonionic, low-osmolar, Iopromide, 300 mg of iodine per milliliter, (Ultrascan 300, Schering, The Netherlands) was administered in all patients. The mean dose of contrast injected was 160 ± 10 ml. Serum creatinine was measured immediately before and 24 and 72 hours after administration of the contrast agent. Radiocontrast nephropathy was defined as an increase in serum creatinine of at least 20% over baseline within 24 or 72 hours after administration of the contrast. All patients were encouraged to drink 1 liter of water during the 12 hours before and 2 liters during the 24 hours after the procedure.

**Results**: Mean serum creatinine was 250.5 μmol/L ±110.6 (149-705) before, 255.2 ±114.9 (148-698) 24 hours and 263.0 ±124.3 (141-724) 72 hours after administration of the contrast (p =0.03). Nevertheless, only two patients (4.6%) experienced an increase of 20% in serum creatinine levels. On 7th day, there was return to baseline creatinine level in the two patients.

When patients with diabetes mellitus were analysed separately, the baseline creatinine level was 259.5 ±150.1 μmol/L (164-705), at 24 hours was 279.0 ± 158.8 (148-698), and 283.5 ± 172.1 (164-724) at 72 hours after (p =0.05).

**Conclusions**: Spiral CTA is a minimally invasive procedure without substantial risk of contrast material-induced nephrotoxicity, even in high-risk patients with preexisting renal insufficiency and diabetes mellitus.

Key Words: Renal artery stenosis, Contrast nephropathy, Spiral computed tomography angiography

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**P-165**

**RENA L FUNCTION IN RELATION TO THREE CANDIDATE GENES IN A CAUCASIAN POPULATION**

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We recently found that the incidence of hypertension and femoral intima-media thickness (IMT) are influenced by epistatic interactions between the genes encoding ACE (I/D polymorphism), α-adducin (Gly460Trp) and aldosterone synthase (−adducin). By interfering with BP or Na+ homeostasis, these genetic polymorphisms may also change renal function. We therefore genotyped a random population sample for these 3 genes. We measured serum creatinine and uric acid and 24-h urinary protein excretion and determined calculated and measured creatinine clearances (CrCl). The 1454 participants (64.3% of those invited) were 43.4 years old and included 744 women (51.2%). The prevalence of renal dysfunction (CrCl ≤60 mL/min/1.73 m²) was 11%. The BP measured by the study nurses at the subjects’ homes averaged 123/76 mm Hg. Mean values were 90 μmol/L for serum creatinine, 300 μmol/L for serum uric acid (n=1194), 90 mg/day for proteinuria (n=556), and 84 and 88 mL/min/1.73 m² for calculated and measured (n=855) CrCl, respectively. In single-gene analyses with adjustment for significant covariates, serum creatinine, proteinuria and the risk of mild renal dysfunction were positively associated with the ACE D allele. However, these relations with the ACE D allele were confined to carriers of the mutated α-adducin Trp allele (40.1% of all subjects), in whom serum creatinine, proteinuria and the relative risk of mild renal dysfunction were 4.3 μmol/L (P=0.003), 20% (P=0.02) and 302% (P=0.001) higher in carriers of the ACE D allele than in II homozygotes. The presence of the aldosterone-synthase T allele did not add to the association between renal function and the ACE D allele. Thus, in our cross-sectional population study, renal function was slightly but consistently impaired when both the ACE D and α-adducin Trp alleles were present. These findings, taken together with experimental studies and our previous reports on the incidence of hypertension and femoral IMT, constitute a growing body of evidence delineating a clinical entity genetically determined by the risk-carrying ACE D and α-adducin Trp alleles.

Key Words: Renal function, Angiotensin-converting enzyme, α-adducin

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**P-166**

**EFFECTS OF IBUPROFEN (IB), NABUMETONE (N) AND CELECOXIB (C) ON BLOOD PRESSURE (BP) CONTROL IN HYPERTENSIVE PATIENTS ON ACE INHIBITORS**

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NSAIDs inhibit renal prostaglandin synthesis, affect control of hypertension, and are risk factors for congestive heart failure (CHF). COX-2 specific NSAIDs also affect renal function, increase BP, and have been associated with an increase in myocardial infarctions (VIGOR study). N is not a specific COX-2 inhibitor, but has little effect on renal prostaglandin secretion and had less of an association with CHF than IB or traditional NSAIDs in a large cohort study (1). Effects on BP (mean of 3 sitting measurements) were studied in a double-blind, randomized, placebo-controlled 1-month study of N 1g bid (n=91), C 200mg bid (n=87), IB 800 mg tid (n=91) and P (n=91) in hypertensive patients (18-75 yrs) stabilized for >3 months (DBP <95 mm Hg) on ACE inhibitors usually. The study had 90% power to show equivalence of N to P [upper 98% CI for difference in change from baseline <9 mm Hg SBP and <5 mm Hg DBP] and 94% power to show N and C different from IB (2-sided α of 1.67 to keep overall p <0.05 for 3 comparisons). Change (mean ±SE) in BP from Baseline (mm Hg):

<table>
<thead>
<tr>
<th></th>
<th>Placebo</th>
<th>Celescoxb</th>
<th>Nabumetone</th>
<th>Ibuprofen</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBP</td>
<td>0.1 ± 0.8</td>
<td>1.0 ± 0.9</td>
<td>1.0 ± 0.9</td>
<td>3.3 ± 3.9</td>
</tr>
<tr>
<td>SBP</td>
<td>-2.1 ± 1.4</td>
<td>1.3 ± 1.5</td>
<td>2.2 ± 1.4</td>
<td>5.3 ± 1.4</td>
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</table>

N was equivalent to P with a difference in DBP of 0.9 mm Hg (98% CI -1.9, 3.7) and difference in SBP of 4.2 mm Hg (98% CI -0.2, 8.7). (C also would be equivalent to P.) The increase in BP with N was less than with IB: DBP (p=0.06), 68%; SBP (p=0.10, 59%), and the increase with C was also less than with IB: DBP (p=0.05), 71%; SBP (p=0.03), 75%. Post-hoc analyses showed that SBP increased ≥20 mm to ≥140 mm in 1 P, 5 N, 4 C, and 15 IB patients (p<0.02, IB vs C or P vs C or N = NS). Both non-selective N and COX-2 selective C differ from IB with respect to BP control in hypertensive patients on ACE inhibitors; N was equivalent to P in effect on BP control. 1. Donnan PT. Pharmacoeconomics. Drug Safety 2000;8:S115.

Key Words: COX inhibition, Nabumetone, Celecoxib

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**P-167**

**CONTINUOUS RELATIONSHIP BETWEEN LEFT VENTRICULAR MASS, ALBUMIN/CREATININE RATIO AND 24-HOUR BLOOD PRESSURE IN NEWLY DIAGNOSED ESSENTIAL HYPERTENSION**

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The aim of the present study was to investigate the association between albumin excretion rate (AER) and left ventricular mass (LVM) within the...
normal range, and ambulatory (A) blood pressure (BP) in patients with essential hypertension (EH).

Seventy-one (71) patients (mean age 47.2 years) with never-treated EH diagnosed within the last year, and with conventional measured diastolic (D) BP > 95 mm Hg referred to the Hypertension Clinic (Ulleval University Hospital) for ABP monitoring (M), were included. Patients with diabetes mellitus, left ventricular hypertrophy, elevated serum creatinine > 130 μmol/L, positive urine dipstick for albumin or glucose were not eligible. AER was evaluated by albumin/creatinine ratio (ACR) in the first-voided morning urine sample taken at the end of the ABPM, and LVM was assessed by the Cornell voltage-QRS duration product corrected for gender. Patients with ACR ≥3.0 mg/mmol and left ventricular hypertrophy (LVH, Cornell product > 2440 mm-ms) were excluded (n=3), and further analyses were undertaken in 68 patients (51 men and 17 women).

AER correlated with 24-hour, daytime and nighttime both systolic (S) BP and DBP (r=0.42-0.53, all p values <0.0005). There was a weak, but significant correlation between nocturnal SBP and DBP fall and ACR (r=-0.26, p<0.05 and r=-0.28, p < 0.05 respectively). All BPs were higher in the top tertile of ACR compared to the two lower tertiles. There was a statistical significant trend towards increased values of Cornell product with higher ACR, and this trend remained significant after adjustment of age, gender, body mass index and 24-hour pulse pressure (p=0.002). Patients in the top tertile of Cornell product had higher levels of ABP as well as higher values of ACR. Cornell product was significantly related to ABPs (r=0.32-0.37, all p < 0.001) and ACR (r=0.36, p < 0.005). A stepwise multiple regression analysis showed that only SBP was independently and significantly correlated with Cornell product (β=0.372, p=0.002). Of the variables excluded from the regression model, the highest partial correlation coefficient with Cornell product was observed for ACR (β=0.328, p=0.077).

In conclusion, our findings indicate early cardiac and renal involvement in untreated patients with EH. Continuous relationships between LV, ACR and ABPs are observed, and values within the "normal range" of LV and ACR may also be clinically relevant.

Key Words: Urinary albumin excretion, Ambulatory blood pressure, Left ventricular mass

Long Term Efficacy and Tolerance of Irbesartan in Elderly Hypertensive Patients with Renal Impairment

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Objective: We evaluated the blood pressure lowering activity, tolerability and safety of Irbesartan (I) in 32 elderly hypertensive (sitting diastolic blood pressure, 90 to 115 mmHg) patients with chronic renal insufficiency including mild renal insufficiency (30 to 60 ml/min x 1.73 m²; n=30), moderate to severe renal insufficiency (10 to 29 ml/min x 1.73 m²; n=2) in one year trial.

Design and Methods: After a 3-week placebo period, once daily I was administered for 12 months at daily dose of 150 mg. A second, non-angiotensin-converting enzyme inhibitor, antihypertensive drug was added after 8 weeks as needed. Twenty-four-hour creatinine clearance was determined and renal clearance studies of inulin and paraminohippurate were done in a subset of 11 patients.

Results: Though sitting blood pressure were reduced at the end of the first week in all groups. At weeks 4, 8, 12 and after one year the reductions in systolic blood pressure/diastolic blood pressure averaged were -11.9/-8.7, -10.8/-9.4 and -14.7/-12.1 mmHg in patients with mild renal insufficiency; -7.7/-6.3, -13.1/-11.8, and -14.1/-10.6 mmHg in moderate to severe renal insufficiency.Creatinine clearance,glomerular filtration rate and effective renal plasma flow were stable.I was withdrawn in only 6 patients because of a clinical or laboratory adverse experience.

Conclusion: We conclude that once-daily I given as monotherapy at dose of 150 mg or in combination with other antihypertensive drugs, was effective in reducing blood pressure in elderly hypertensive patients with chronic renal disease and that I regimens were well tolerated in all groups.

Key Words: Renal Impairment, Elderly Hypertensive Patients, Irbesartan

Renal Hypertrophy and Pulse Pressure in Renal Transplant Recipients

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Renal transplant recipients bear an enhanced cardiovascular mortality. Left ventricular hyper-trophy (LVH) and elevated pulse pressure are considered cardiovascular risk factors. LVH is common in allografted patients, whereas pulse pressure has not yet been assessed in this patients. The objective of the study was to investigate the association between LVH and pulse pressure over a long-term in renal transplant recipients. 67 renal transplant recipients were examined clinically and echocardiographically shortly before and during the first 12 posttransplantational months. Cardiac mass was determined using M-mode echocardiography. Noninvasive blood pressure was measured using a phsyomonometer and the dinaap device. Data of 38 patients (age: 47.4 ± 2.2 years; BMI: 23 ± 0.5 kg/m²; duration of hemodialysis: 53.3 ± 6.4 months; mean ± SEM), who