The mean pore size radius of the glomerular membrane remained unchanged. This effect was independent of glomerular haemodynamic changes (Figure 2).

Conclusions
Our findings with the Ang II antagonist valsartan show a sustained reduction in blood pressure and proteinuria even in patients with advanced renal failure. While GFR and ERPF remained nearly stable, this effect could be attributed to an improvement in glomerular permselectivity. A preserved excretory renal function together with functional benefits in glomerular permselectivity may recommend this class of antihypertensives as a 'nephroprotective alternative' to ACEIs. This will require further long-term studies.

References


A randomized, double-blind, parallel study on the safety and antihypertensive efficacy of losartan compared to captopril in patients with mild to moderate hypertension and impaired renal function

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The angiotensin II (Ang II) pathway plays an important role in the progression of renal disease. The renal effects of Ang II are also crucially involved in maintaining blood pressure (BP) in hypertension.

This international multicentre study was conducted to compare the effects on blood pressure, creatinine clearance, proteinuria and lipids of the Ang II AT1 receptor antagonists losartan (LOS) and captopril (CAP) in patients with mild to moderate hypertension and impaired renal function. Another aim of the present study was to evaluate the safety and tolerability of LOS in this special group of patients which are not yet well documented.

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Blood pressure reduction is necessary for the reduction of proteinuria in diabetic nephropathy—comparison of different antihypertensive agents

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As is well known, besides blood glucose concentrations, proteinuria and hypertension are the main factors in the progression of diabetic nephropathy. We performed a randomized, double-blind and placebo-controlled study to answer the following questions: do different antihypertensive agents—especially β-receptor blockers with vasodilating activity—influence renal haemodynamics and proteinuria in patients with diabetic nephropathy and is there a relationship to blood pressure reduction?

The following drugs were used: the β1-receptor antagonist metoprolol (95 mg/day), the β1-antagonist and β2-agonist celiprolol (200 mg/day) and the angiotensin-converting enzyme (ACE) inhibitor benazepril (5 mg/day). Each drug, in addition to placebo, was applied over a period of 4 weeks with a wash-out period of 2 weeks in between.

Twelve patients (age 63 ± 3 years) with diabetes mellitus IIb took part in the study. To guarantee a homogeneous group, the participants had to fulfil the following inclusion criteria: proteinuria of 300 mg–3.5 g/day, serum creatinine < 1.8 mg/dl and a mild hypertension after the initial wash-out period of 2 weeks. The patients were allowed to continue the diet they were used to. During the whole study, they remained on an out-patient basis. At the end of each medication period, blood pressure was measured continuously over 24 h. Proteinuria was determined as the mean of a 2 day collecting period. The glomerular filtration rate (GFR) and effective renal plasma flow (ERPF) were measured by inulin and PAH clearance. The results are given in Table 1.

The measured hormone concentrations showed the expected significant changes under the ACE inhibitor treatment: an increase of plasma renin activity and a decrease of ACE. These observations can act as the control of the compliance of our patients.

Summing up our results, there were no significant changes in renal haemodynamics either with the ACE inhibitor or with the vasodilating β-blocker celiprolol in doses not affecting systemic blood pressure. No significant reduction of proteinuria could be observed with the β-receptor blockers and ACE inhibitor within the 4 weeks of treatment despite the significant reduction of blood pressure by metoprolol.

We were surprised that no significant changes in our