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**PREDICTORS OF PROTEINURIA REDUCTION BY MONOTHERAPY
WITH AN ANGIOTENSIN RECEPTOR BLOCKER, OLMESARTAN**

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We have demonstrated that blood pressure (BP) is elevated as glomerular filtration rate (GFR) is reduced in patients with chronic kidney disease [Kidney Int 65:621-5,2004]. We also reported that reduced GFR was a crucial factor to BP lowering effect of antihypertensive agents [J Hypertens 28:2323-8,2010]. Therefore, we tested whether the antiproteinuric effect of monotherapy with an angiotensin receptor blocker (ARB) could be estimated by reduced GFR. Thirty-five CKD patients who had albuminuria >30 mg/day were studied before and during 8 weeks of monotherapy with ARB, olmesartan. BP was lowered from 129±18/79±12 to 116±18/72±12 mmHg (p<0.0001), while albuminuria was reduced from 614±630 to 343±472 mg/day (p<0.0001). Albuminuria was inversely correlated with GFR both before and during treatment. Albuminuria reduction was enhanced as plasma renin activity (p=0.047) and dose of olmesartan were higher (p=0.04). Although the absolute reduction in proteinuria was not correlated with GFR (p=0.56), the % reduction was significantly proportional with GFR (p=0.027). Multiple regression analysis demonstrated that 64 % of proteinuria reduction could be explained by baseline levels of albuminuria, GFR and renin activity:

$$\Delta AER = 0.37 \times \text{baseline AER} + 2.37 \times GFR + 97.3 \times PRA - 282.4$$

,where AER, PRA indicate urinary albumin excretion rate, plasma renin activity, respectively.

In conclusion, the present study indicates that the reduction in proteinuria by olmesartan may be roughly predicted using baseline GFR and other parameters. These findings clarify that the effect of ARB on proteinuria reduction is restricted by reduced GFR.