

## 저용량 사이클로스포린과 딜티아젬 병용요법에 의한 신증후군 관해

고신외대 부속 복음병원 내과

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### Remission of Nephrotic Syndrome by the Combination of Low-dose Cyclosporine-A with Diltiazem

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**Background :** Cyclosporine- A (CsA) has been widely used as a treatment of nephrotic syndrome especially in patients with steroid- resistance or steroid- dependence. However it can be nephrotoxic and its cost might also be a point to be considered. Diltiazem (DZ), one of calcium channel blockers, may have a potential benefit of renoprotection, which decreases acute tubular necrosis of renal transplants. DZ can also be used for reducing CsA dose because it slows down the metabolism of CsA by inhibition of cytochrome P- 450 hepatic enzyme. In these points of view, low- dose CsA with DZ combination could be considered as an alternative to nephrotic syndrome treatment. However, such a kind of trial is hardly found so far. The purpose of this study is to evaluate the therapeutic effect of low- dose CsA with DZ in patients with steroid- resistant and steroid- dependent nephrotic syndrome.

**Methods :** Low- dose of CsA (mean  $1.7 \pm 0.5$  mg/kg) and 90 mg of DZ were administered simultaneously to 15 patients of steroid- resistant or steroid- dependent nephrotic syndrome for 6 months with no alteration of dose. Blood pressure, body weight and random urine protein, 24- hour urine protein, serum creatinine, albumin, total cholesterol, and trough level of CsA were checked and analyzed.

**Results :** Random urine protein tended to decrease by CsA treatment. Twenty- four hour urine protein excretion decreased significantly at 6th months of treatment (from  $7,211 \pm 5,374$  mg to  $1,094 \pm 1,688$  mg,  $n=7$ ,  $p=0.018$ ). Complete remission was achieved in 10 patients and partial remission in 5 patients. Changes in serum albumin, total cholesterol, hemoglobin, body weight and blood pressure were statistically not significant.

**Conclusion :** Low- dose CsA combined with DZ can be an effective in patients with steroid- resistant or steroid- dependent nephrotic syndrome.

**Key Words :** 사이클로스포린, 딜티아젬, 신증후군  
Cyclosporine- A, Diltiazem, Nephrotic syndrome