

실험적 항사구체 기저막 신염에서 레닌 억제제인 Aliskiren의 효과

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Effect of Aliskiren, Direct Renin Inhibitor, in an Experimental Anti-Glomerular Basement Membrane Nephritis Model

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Purpose : We performed this study in order to investigate the effect of Aliskiren, new direct renin inhibitor, on experimental animal model with acute nephritis induced by anti-glomerular basement membrane (GBM) antibody and tried to give an useful informations for the clinical research and treatment with renin inhibitor.

Methods : Total thirty BALB/c mice of 6-week-old male were divided into 4 groups; control group (CO) (n=5), control-treatment group with Aliskiren (CT) (n=5), disease group (DO) (n=10), disease treatment group with Aliskiren (DT) (n=10). Nephritis was induced by intravenous injection of 0.25 mg/g weight of rabbit anti-GBM Immunoglobulin G. Model 2002 Alzet mini-osmotic pumps (Durect Corp.) which were infused with Aliskiren were implanted into CT and DT. Each group strain was sacrificed serially at a time on days 14. We estimated the protein-creatinine ratio in 12 hour-collected urine (UP/Cr) and measured the mesangial matrix score in PAS-stained kidney of each strain.

Results : One strain at CT and DT died on day 6 and 7, respectively. Each group strain was sacrificed serially at a time on day 10 because DO were seriously ill. UP/Cr of each group was followings; CO, 31.24 ± 6.54 mg/mg, CT, 23.38 ± 13.60 mg/mg, DO, 112.72 ± 10.97 , DT 114.07 ± 32.30 . There was no significant difference between DO and DT. Mesangial matrix score of each group was CO, 0.23 ± 0.10 , CT, 0.13 ± 0.03 , DO, 1.90 ± 0.48 , DT, 1.28 ± 0.41 and there was a significant difference between DO and DT in the extent of mesangial matrix expansion ($p=0.008$).

Conclusion : We found that renin inhibition was able to inhibit the progression of the mesangial matrix expansion in experimental mice with acute-GBM nephritis, although there were no significant differences in UP/Cr.

Key Words : 레닌억제제, 항사구체막 신염, 단백뇨

Renin inhibitor, Aliskiren, Acute Glomerular basement membrane