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Glomerular disease

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Protective effect on kidney owing to the use of Pentoxifylline in a patient with IgA nephropathy

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Background: IgA nephropathy is mesangioproliferative glomerulonephritis generated by the creation of immune complex, mesangial deposition, and the activation of secondary immune-mediation substances. It is reported that the general mechanism and recent IgA Nephropathy cause podocyte dysregulation triggered by such substances as (TGF)-beta and (TNF)-alpha, and thereby lead to mesangial deposition. It is not clearly revealed what kinds of mechanism the deteriorated IgA nephropathy is included. Pentoxifylline has various pathways of anti-oxidation effect, improving erythrocyte defomability and thereby decreasing blood viscosity. As a result, the substance not only betters capillary blood flow, but modulates falls in such substances as IL-1 and interferon- γ , TGF- β . A case in point is TNF- α blocker. The purpose of our research is to use pentoxifylline and investigate whether or not proteinuria and GFR are reduced in IgA nephropathy.

Methods: With the patients who had been diagnosed with IgA nephropathy in the biopsy from Jan. 2005 to Dec. 2014, this researcher compared the patients who had taken pentoxifyphillin 800mg more than 5 years with the patients who didn't. With the group of 42 patients who had taken the medicine and the group of 168 patients who didn't, propensity score had 1 to 2 matching in order to calibrate baseline characteristics of the patients.

Results: The two groups had no difference in baseline characteristics. In regard to three-year GFR reduction rate on baseline, the experimental group had 3.8%, the control group 5.3% (P=0.346). Regarding proteinuria increase rate, the experimental group had 7.5%, the control group 9.2% (P=0.274). Therefore, there was no significant difference between the two groups. However, in the exam of five years, GFR reduction rate of the experimental group was 4.4%, whereas that of the control was 7.8%, which was significantly different (P=0.016). Regarding proteinuria increase rate, the experimental group had 8.5% and the control group 13.4%, which was also significantly different (P=0.021). When it came to dialysis of each group, the experimental group had 2.5%, and the control group 15%, which was significantly different (P=0.019).

Conclusion: It was shown that the use of pentoxifyphilline helped to reduce GFR and proteinuria of IgA nephropathy patients. For the grounds, it will be necessary to conduct animal testing and prospective study.

Keywords: IgA nephropathy, Pentoxifyphilline