

Abstract Submission No.: A-0318

Change of podocyte-glomerular basement membrane interaction in nephrotic syndrome

JAESEOK KIM¹, Junyoung Kim², Sooyeon Choi¹, Donghui Shin¹, Jun Young Lee¹, Jae Won Yang¹, Byoung Geun Han¹, Seung Ok Choi¹, Minseob Eom³

¹Department of Internal Medicine-Nephrology, Wonju Severance Christian Hospital, Korea, Republic of

²Department of Pathology, Wonju Severance Christian Hospital, Korea, Republic of

³Department of Biomedical Engineering, College of Software and Digital Healthcare Convergence, Yonsei University, Korea, Republic of

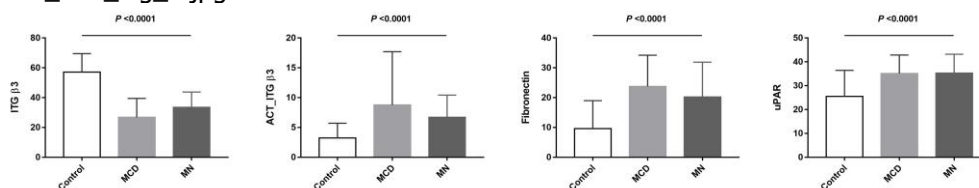
Objectives : Glomerular basement membrane (GBM) - podocyte interaction is important in podocyte stability. In our view, podocytes are believed to change their types of interaction with GBM under unfavorable conditions to preserve their stability. Here, we aimed to explore whether integrin (ITG) $\alpha\beta3$, fibronectin (Fn), and urokinase-type plasminogen activator receptor (uPAR) were changed under nephrotic syndrome with human kidney tissue samples.

Methods : We collected a total of 45 kidney tissues from the patients with trauma (control), minimal change disease (MCD), and membranous nephropathy (MN). We performed immunohistochemical staining for ITG $\beta3$, activated integrin (ACT-ITG) $\beta3$, Fn, and uPAR in those kidney tissue samples. Then, we compared the expressions of them between control, MCD, and MN.

Results : The results showed that in MCD and MN, ITG $\beta3$ decreased, whereas ACT-ITG $\beta3$ increased more compared to those of control. Furthermore, Fn and uPAR also increased more in MCD and MN compared to those of control (Figure 1). When comparing control with nephrotic syndrome including MCD and MN, the nephrotic syndrome group showed less ITG $\beta3$ expression, whereas it showed more expressions of ACT-ITG $\beta3$, Fn, and uPAR (Figure 2).

Conclusions : This study demonstrates that ITG $\alpha\beta3$ is activated, while Fn and uPAR increase under nephrotic syndrome. We suggest that podocytes change their interaction with GBM under nephrotic syndrome.

ITG_Rbx_Fig_1.jpg



ITG_Rbx_Fig_1.jpg

