

만성 Cyclosporin 콩팥손상 모델에서 Hyaluronan과 그 수용체의 발현

가톨릭대학교 의과대학 내과학교실

한동하 · 송현국 · 기정연 · 윤혜은 · 김수현 · 최범순 · 김용수 · 김진 · 방병기 · 양철우

Expression of Hyaluronan and its Receptor in Chronic Cyclosporine Nephropathy

Dong He Han, Hyun Kuk Song, Jung Yeon Ghee, Hye Eun Yoon, Su Hyun Kim
Bum Soon Choi, Yong-Soo Kim, Jin Kim, Byung Kee Bang and Chul Woo Yang

Departments of Internal Medicine The Catholic University of Korea

Purpose : Our previous study demonstrated that chronic cyclosporine A- induced renal injury via activation of TLR (Toll- like receptor) produces an inflammatory response. TLR family has been reported to mediate the hyaluronan-induced innate immunity, which initiates the immune response in the renal injury and inflammation. In this study, we investigated the effects of HA and its specific receptor in CsA- induced nephrotoxicity.

Methods : Sprague- Dawley rats maintained on a low salt diet (0.05% sodium) were treated subcutaneously with vehicle (olive oil, VH, 1 mL/kg s.c.) or CsA (15 mg/kg/d, s.c.) for 4 weeks. The expression of HA and CD44 was examined using immunohistochemistry.

Result : In the VH groups, expression of HA was strongest in the interstitium of inner medulla. Also it was observed in a part of interstitium of outer medulla and cortex. On the other hand, CsA treatment significantly increased HA expression in the interstitium of outer medulla and cortex compared with VH groups, especially in expanded and fibrotic areas. Expression pattern of CD44 was similar to HA. Like HA, there was no immunoreactivity of CD44 in renal tubules of cortex and outer medulla in VH- treated rat kidneys. But, expression of CD44 was significantly increased in cortex and outer medulla in CsA- treated rat kidneys compared to the VH group, and it was localized to interstitial fibrotic areas.

Conclusion : HA and its receptor are upregulated in interstitial fibrosis area in chronic CsA nephropathy, and this may explain a potential role of HA in interstitial inflammation and fibrosis in CsA- induced renal injury.

Key Words : 사이클로스포린, 간질 섬유화, 하이알루로난
Cyclosporine A, interstitial fibrosis, Hyalurinan