

Abstract Type : Poster

Abstract Submission No. : 1198

Role of tau protein in chronic kidney disease

Seong Woo Lee¹, Seung Seob Son¹, Mi Ju Park¹, Min Sun Choi¹, Jeong Suk Kang², Ji-Hye Lee³, Na-Young Kim⁴, Seung-Yong Yoon⁴, Eun Young Lee²

¹Department of Medicine and BK21 FOUR Project, Soonchunhyang University College of Medicine, Korea, Republic of

²Department of Internal Medicine-Nephrology, Soonchunhyang University Cheonan Hospital, Korea, Republic of

³Department of Pathology, Soonchunhyang University Cheonan Hospital, Korea, Republic of

⁴Department of Brain Science, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea, Republic of

Objectives: Patients with Chronic kidney disease (CKD) have a higher incidence of dementia than normal people. Among the major proteins associated with senile dementia, tau protein has been actively studied, but there are few studies on the association between CKD and tau protein. Therefore, this study investigated the role of tau protein in CKD.

Methods: CKD mice were induced with a 0.2% adenine diet (AD-CKD). Sacrifice was performed at 1, 2, and 4 weeks, Acetyl tau-specific antibody was administered by I.P. once a week. Blood urea nitrogen, serum creatinine, and urine ACR were confirmed as a clinical index. Periodic acid–Schiff and Masson’s trichrome stain were used for histological changes. The expression level of tau protein was confirmed by WB and IHC.

Results: The expression of tau protein was significantly increased in kidney from patient with CKD. AD-CKD mice showed the increased albuminuria, tubular dilatation, and fibrosis and also tau protein level was gradually increased in kidney at 1,2, and 4 weeks, respectively. To investigate the renal protective effect by modulating tau level, acetyl tau-specific antibody was treated. We found the tendency of decreased albuminuria, blood urea nitrogen, and fibrosis in acetyl tau-specific antibody-treated AD-CKD mice.

Conclusions: We observed the elevated Tau expression in kidney at human and mouse CKD. This results suggest that Tau protein might be associated with renal injury and be a target for CKD treatment.