

Abstract Submission No. : 1256

The Effect of AST-120 on regulatory T cell population in Patients with Chronic Kidney Disease

Nagyeom Lee, Yanghyeon Kim, Sujung Heo, Ye Na Kim, Ho Sik Shin, Yeonsoon Jung, Hark Rim
Department of Internal Medicine-Nephrology, Kosin University Gospel Hospital, Korea, Republic of

Objectives: Recent studies have shown that regulatory T cells play a role in protecting the kidney and are the expected immunotherapy target in CKD. AST-120 adsorbs uremic toxins and excretes them in the feces. In animal experiments, it has been reported that administration of AST-120 reduces the severity of glomerulosclerosis and the level of serum creatinine, increases survival, relieves symptoms related to uremic urethra, and reduces the rate of decline in renal function in animals with chronic kidney disease. This study was conducted to evaluate the effect of AST-120 on Treg distribution and renal function.

Methods: This study included 27 adult patients diagnosed with CKD stages 3,4,5 at Kosin University Gospel Hospital from March to December 2020. Clinical data included age, sex, height, body weight, blood pressure, heart rate, respiratory rate, and body temperature. Complete blood count, creatinine (Cr), sodium, potassium, albumin, and total CO₂ were included in the laboratory findings. For patients with chronic kidney disease stage 3, 4, and 5 who have been taking AST-120 for less than 1 month, These clinical and laboratory data were collected at the initiation of the study and after 3 months . Tregs were defined as CD4⁺CD25^{high}CD127^{low}/-FoxP3⁺ cells.

Results: The patient group with a glomerular filtration rate of less than 30 mL/min showed less decrease in renal function and a higher distribution of regulatory T cells compared to the group with a glomerular filtration rate of 30 or higher.

Conclusions: This study showed that AST-120 may increase Treg distribution and protect kidney function in CKD patients.

Figure1. The change of distribution of regulatory T cells in GFR < 30 mL/min

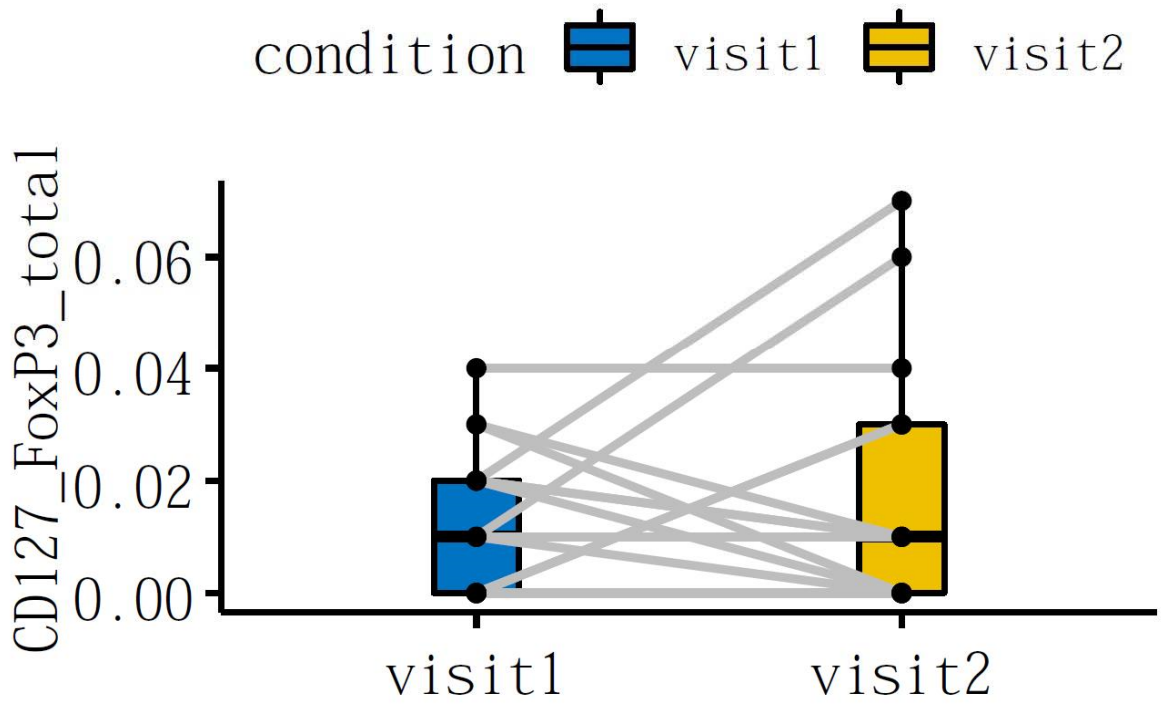


Figure 2. The change of renal function in GFR < 30 mL/min

