

AST-120이 순환 TNF 수용체 농도에 미치는 영향 및 순환 TNF 수용체와 콩팥, 심혈관계 예후의 상관 관계

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AST-120 Affects the Level of Circulating TNF-alpha Receptors that Predict Both Renal and Cardiovascular Outcomes in Patients with Advanced Renal Dysfunction

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Introduction: Tumor necrosis factor alpha and its two receptors have a critical role in kidney diseases. We aimed to establish the role of circulating TNF-alpha receptors (cTNFRs) as a new biomarker of renal disease and to identify the impact of AST-120 on the level.

Methods: 579 patients from 11 medical centers in Korea were prospectively recruited and followed up for 36 months after randomization into AST-120 and control arms. A total of 6 gram of AST-120 was given to participants in AST-120 arm as well as conventional treatment. cTNFRs were measured by ELISA method. The renal outcome was composite of serum creatinine (SCr) doubling, 50% reduction of estimated glomerular filtration rate (eGFR), or initiation of renal replacement therapy. Major adverse cardiovascular events (MACE) were also evaluated.

Results: A total of 465 patients were analyzed. Mean SCr and eGFR level was 2.81 ± 0.666 mg/dl and 26.79 ± 7.263 ml/min/1.73m², respectively. The levels of cTNFRs throughout the study period were not different between two treatment arms. But the higher AST-120 compliance patients had, the lower cTNFRs they showed in the AST-120 arm. The highest tertile of cTNFRs showed the highest cumulative rate of composite renal outcomes followed by the intermediate tertile of cTNFRs even after the adjustment for diabetes, eGFR, and urinary protein excretion. And the change of cTNFRs was also independently associated to the occurrence of composite renal outcomes. MACEs occurred more frequently in patients with higher baseline cTNFRs and more change of cTNFRs (log-rank p=0.01, 0.002 and 0.021 for cTNFR1, cTNFR2, and change of cTNFR2, respectively) and the significance of cTNFR2 remained after adjustment for diabetes, CKD stage, and proteinuria.

Conclusions: cTNFRs predicted both renal and cardiovascular outcomes in patients with advanced renal dysfunction. And AST-120 was effective to lessen the increase of cTNFRs. Longer period of observation and larger size of participants is needed to find that cTNFRs can be a good biomarker of renal diseases and associated complications.

Key Words: AST-120, 만성 콩팥병, 순환 TNF 수용체

AST-120, Chronic kidney disease, Circulating TNF-alpha receptor