

혈액투석 환자에서 AST-120이 혈관내피세포 기능부전에 미치는 효과: 예비 보고

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AST-120 Improved Microvascular Endothelial Dysfunction in Hemodialysis Patients: A Preliminary Report

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Background: Endothelial dysfunction (ED) is a pivotal phenomenon in the cardiovascular diseases (CVD), which are causes for morbidity and mortality in the patients receiving hemodialysis (HD). Indoxyl sulfate (IS), protein-binding uremic toxin which is not eliminated by HD has been known to be important risk factor in inducing endothelial dysfunction in chronic kidney disease. The aim of this study is to investigate whether AST-120, an absorbent for indoxyl sulfate improves microvascular or macrovascular ED in HD patients.

Methods: Ten patients receiving HD during at Ewha Mokdong hospital more than 3 M were enrolled in this analysis. Patients were treated with AST-120 (6 g/day) for 6 M. Microvascular function was assessed by laser Doppler flowmetry (LDF) using iontophoresis of Acetylcholine (Ach) and sodium nitroprusside (SNP). The LDF with iontophoresis was performed at baseline, 3M, and 6M. Carotid arterial intima-media thickness (IMT) and flow-mediated vasodilation were measured at baseline and 6 M. Laboratory findings included the level of IS, blood chemistry, hsCRP at baseline, 3M, and 6M. Wilcoxon rank test was performed to compare the values before and after AST-120 treatment.

Results: Ach-induced vasodilation of iontophoresis (endothelium-dependent response) was significantly improved in 3 M and 6 M compared to baseline, respectively (Figure 1). SNP-induced response was not significantly changed. The level of IS was decreased at 3 M, and did not show more decrease at 6M. IMT was significantly reduced at 6 M compared to baseline (mean IMT: 0.780 ± 0.098 mm at baseline vs. 0.735 ± 0.093 mm at 6M, $p=0.012$). However, the FMD at 6M did not show any change compared to baseline. A significant side effect of AST-120 was not reported.

Conclusion: AST-120 ameliorated microvascular endothelial dysfunction and IMT in HD patients. Randomized, case-control study composed with larger population is required to prove definite role of AST-120 as a preventive medication for CVD in HD patients.

Key Words: 혈관내피세포 기능부전, 혈액투석, AST-120
Endothelial dysfunction, Hemodialysis, AST-120

