

TNFSF13과 면역글로블린 A 신병증의 발생 및 예후와의 관련성에 관한 연구

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TNFSF13 has a Key Role in both the Susceptibility and Progression of IgA Nephropathy

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Backgrounds: Tumor necrosis factor superfamily 13 (TNFSF13, also known as APRIL) has been found as a susceptibility gene in the genome-wide association study of IgA nephropathy. However, this issue is not fully established at least in Korean subjects, and the role of TNFSF13 in the progression of IgA nephropathy remains unresolved.

Methods: 634 patients with IgA nephropathy were recruited from major 4 hospitals. Two SNPs of TNFSF13 gene (rs3803800 and rs11552708) were evaluated and compared with the data on 1068 healthy controls. Furthermore, plasma TNFSF13 level at the time of diagnosis was measured using ELISA and compared with the data on 30 healthy volunteers. The times to end-stage renal disease or doubling of serum creatinine were used as primary outcomes and the odds ratios (ORs) for outcomes were calculated according to the genetic polymorphisms or the quartiles of plasma TNFSF13 level.

Results: For rs3803800, the susceptibility of IgA nephropathy increased in AA homozygotes [OR, 1.4 (1.03-1.94); $p=0.034$]. The serum IgA levels in patients with AA homozygotes were significantly higher than patients with AG or GG genotypes ($P<0.05$). For rs11552708, there was neither correlation with disease susceptibility nor the difference in serum IgA levels. During the following period (median, 44 months; interquartile range, 29-78 months), 94 and 112 patients were determined as having end-stage renal disease or doubling of serum creatinine, respectively. Neither of two SNPs was associated with these outcomes. However, plasma TNFSF13 levels had significant correlations with both outcomes: the 4th quartile had greater ORs for end-stage renal disease [25.5 (3.42-190.16)] and doubling of serum creatinine [11.3 (3.40-37.30)] compared with the 1st quartile [Fig. 1]. Patients with IgA nephropathy had greater plasma TNFSF13 levels compared with healthy volunteers ($p=0.021$) [Fig. 2].

Conclusions: The present study first demonstrates the relationships of TNFSF13 with both the susceptibility and progression of IgA nephropathy.

Key Words: 면역글로블린 A 신병증, 발생, 예후
APRIL, IgA nephropathy, TNFSF13

