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IgA 신증의 진행 예측 인자로써의 혈중 및 뇨중 NGAL 의 역할

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The Prognostic Significance of Serum and Urine NGAL in the Patients with IgA Nephropathy

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Background: Tubulo-interstitial injury plays an important role in the progression of IgA nephropathy and the neutrophil gelatinase-associated lipocalin (NGAL) is one of the most sensitive tubular injury marker. The aim of this study is to investigate whether the serum or urine NGAL predicts the prognosis in patients with IgA nephropathy.

Methods: From January 2005 to December 2010, patients with biopsy proven IgA nephropathy whose serum and urine samples at the time of kidney biopsy were conserved with frozen state, were enrolled in this study. We retrospectively reviewed their clinical data and followed them up till October 2012. Serum and urine NGAL levels were measured using ELISA kit. Renal progression was defined as eGFR decline more than fifty percent or progression to end-stage renal disease (ESRD).

Results: A total of 121 patients were enrolled in this study. During the median follow up period of 41.49 months, renal progression was found in 9 patients (7.4%). In our study, serum or urine NGAL alone could not predict the renal progression, however, when the serum and urine NGAL levels were combined, high NGAL group independently predicted the renal progression (HR 4.58,95% CI 1.13- 18.59, p=0.033) along with the tubular damage graded by oxford classification T2 (HR 6.61, 95% CI1.51-28.91, p- 0.004). Also, the Kaplan-meier curve for the renal survival showed significantly higher renal progression in the high NGAL group(log rank, p=0.004) (Fig 1).

Conclusion: In patients with IgA nephropathy, high serum and urine NGAL levels at the time of kidney biopsy, predicts the the increased risk of GFR decline more than fifty percents or progression to ESRD.

Key Words: 사구체신염, IgA 신증, NGAL
Glomerulonephritis, IgA nephropathy, NGAL

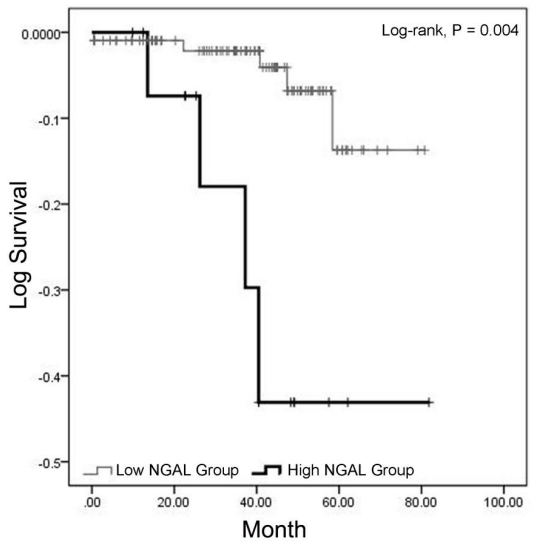


Fig. 1. Kaplan-Meir renal survival curve between high and low NGAL group