

신장 이식 후 신기능 지연이 된 환자에게 술후 2, 3주차 NGAL과 3개월까지 신기능의 연관성

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Correlation between Serum NGAL of Post-transplant 2, 3 Weeks and Graft Function Up to 3 Months after Transplantation in Patients with Slow Kidney Graft Function

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Background: Neutrophil gelatinase-associated lipocalin (NGAL) has emerged as a new, noninvasive diagnostic tool for acute kidney injury. It is known that NGAL associates with delayed graft function; the association has been shown in urine and serum samples taken on the day of, and very soon after, transplantation. And some reported high day 3 NGAL (greater than the mean) was associated with significantly worse kidney function at 3 weeks compared with low NGAL in non-DGF. But little is known about the correlation NGAL with kidney function in patients with slow graft function. The aim of our study was to examine whether serum NGAL levels correlates with the level of kidney function in patients with slow graft function.

Methods: Nineteen subjects with slow graft function were included in this study. Serum NGAL levels were measured at 14th and 21th day after transplantation in patients with slow graft function. And serum creatinine and estimated glomerular filtration rate (eGFR; MDRD equation) were measured at 2 and 3 month after transplantation. Correlation analysis was performed with this data.

Results: The correlation coefficient between serum NGAL levels (post-transplant 14th day) and serum creatinine of post-transplant 1st, 2nd, 3rd month were 0.476, 0.547, 0.481. And those between NGAL (post-transplant 21th day) and serum creatinine of post-transplant 1st, 2nd, 3rd month were 0.310, 0.364, 0.311. The spearman correlation coefficient between serum NGAL levels (post-transplant 14th day) and eGFR of post-transplant 1st, 2nd, 3rd month were -0.204, -0.412, -0.242. And those between NGAL (post-transplant 21th day) and eGFR of post-transplant 1st, 2nd, 3rd month were -0.076, -0.225, -0.114. The NGAL levels showed a positive correlation with serum creatinine and negative correlation with eGFR but it's statistically association is not strong.

Conclusion: The serum NGAL levels on 2nd, 3rd week after transplantation may correlate with graft function up to 3 month post-transplant in patients with slow graft function. But the association is not strong, large-scale study will be needed.

Key Words: 신장이식, NGAL,
신기능 지연
Renal transplantation,
NGAL, Slow graft function

Table 1. The Spearman correlation coefficient between serum NGAL levels (14th and 21th day after transplant) with serum creatinine and eGFR (1st, 2nd, 3rd month after transplant) in patients with slow graft function

	Serum Cr POD 1 month [⊖]	Serum Cr POD 2 month [⊖]	Serum Cr POD 3 month [⊖]
Serum NGAL after transplantation [⊖]			
14 th day [⊖]	0.476 [⊖]	0.547 [⊖]	0.481 [⊖]
21 th day [⊖]	0.310 [⊖]	0.364 [⊖]	0.311 [⊖]
	eGFR POD 1 month [⊖]	eGFR POD 2 month [⊖]	eGFR POD 3 month [⊖]
Serum NGAL after transplantation [⊖]			
14 th day [⊖]	-0.204 [⊖]	-0.412 [⊖]	-0.242 [⊖]
21 th day [⊖]	-0.076 [⊖]	-0.225 [⊖]	-0.114 [⊖]

*eGFR: estimated glomerular filtration rate, Cr: Creatinine, POD: post-operative day