

Impact of body composition and handgrip strength on mortality in hemodialysis patients

¹한림의대 성심병원 내과, ²한림의대 성심병원 신장내과*홍성은¹, 송영림²

Background & Aims: The relationship between BMI (body mass index) and survival in patients undergoing hemodialysis (HD) remains uncertain, although higher BMI is a significant predictor of better survival in HD patients. In the present study, we evaluated the impact of fat and muscle mass and strength on the mortality of HD patients. **Methods:** This study included 115 hemodialysis patients recruited between January 2011 and August 2011 and followed prospectively for up to 4 years. Low muscle mass (by a portable whole-body bioimpedance spectroscopy device) was defined as an lean tissue index (LTI) of 2 standard deviations (SD) or more below the normal gender-specific means for young persons. Low muscle strength (by handgrip) was classified as HGS less than 30 and 20 kg in men and women, respectively. **Results:** The mean age was 59.8±13.1 years; 56.5% were men and 53% had diabetes. During follow-up, 23 patients (20%) died, and low LTI and low HGS were associated with mortality as separate entities. Individuals with low muscle mass alone were not at increased risk of mortality (adjusted hazard ratio [HR], 2.51; 95% confidence interval [95% CI], 0.99 to 6.33). However, low muscle strength was a significant predictor for mortality (HR 2.71; 95% CI, 1.36 to 10.10). **Conclusions:** Low muscle strength was more strongly associated with mortality than low muscle mass. Assessment of muscle strength beside muscle mass or BMI may provide additional diagnostic and prognostic information to survival in ESRD patients.

Association between Interleukin 17A and IL17RA Gene Polymorphisms and Acute Rejection following KTP.

¹Department of Nephrology, School of Medicine, Kyung Hee University, ²Division of Nephrology School of Medicine Inje University Busan*Eun ji Park¹, Dong young Lee¹, Hon Ju Lee¹, Jin Sug Kim¹, Da Rae Kim¹, Chun Gyoo Ihm¹, Yang Gyun Kim¹, Ju Young Moon¹, Sang Ho Lee¹, Sun Woo Kang², Tae Hee Kim², Yeong Hoon Kim², Kyung Hwan Jeong¹

Acute rejection (AR) after kidney transplantation resulting from alloimmune responses has a negative effect on graft survival. IL17, the hallmark cytokine of the newly defined Th17 cell subset, might have a role for the inflammatory response during allograft rejection. IL17RA mainly reacts with IL17A and elicit signal transduction. Many reports showed that single nucleotide polymorphisms (SNPs) of these cytokines can affect the occurrence of AR. Therefore, we have evaluated 332 renal allograft recipients to investigate the relationship between IL17A and IL17RA polymorphisms and AR in Korean population. All 332 renal transplant recipients were divided into 198 men with mean age (± standard deviation) 39.5 (± 11.7) years and 134 women, mean age 41.0 (± 10.9) years. The mean follow up duration after kidney transplantation was 74.4 months and the overall number of AR group was 58. We selected 6 SNPs of IL17A (rs3819024, rs2275913) and IL17RA (rs879575, rs879577, rs2229151, rs4819554) gene and genotyped them to evaluate the association of SNPs and AR. Genotyping data demonstrated no significant association between SNPs and AR by logistic regression analysis after adjustment for age, gender, immunosuppressive therapies (antimetabolite, and basiliximab) except rs879577 for IL17RA. Codominant model of rs879577 ($p = 0.004$, odds ratio 0.11, 95% confidence intervals 0.02-0.86) was significant. To demonstrate pair-wise linkage disequilibrium (LD), no LD block was created using the Gabriel method. In conclusion, these results suggest that the IL17RA gene polymorphism may be related to the development of AR in kidney transplant recipients.

Table 1. Sequences of primers

SNP		Sequence (5'→3')	Product Size (bp)	Temperature (°C)
rs8017550	Forward	ATCCTGTCTCTGGGATTGAGGT	879	58
	Reverse	CTGAGGCCCAAGGAAATTAG		
rs10137082	Forward	CCTCTGTCTTAGAGGGACACC	878	58
	Reverse	GTTCCGATTCACTGCACTAGC		
rs1124053	Forward	GTTGGACAGAGACTTGAACCG	880	58
	Reverse	GTACTTCCCGTCTACGGGT		