

Abstract Submission No.: A-0353**The association between body mass index and mortality in elderly patients with hemodialysis**

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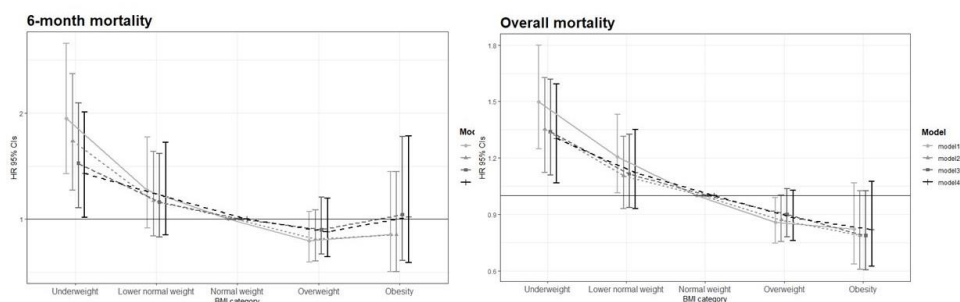
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Objectives : Higher body mass index (BMI) has been associated with reduced mortality in patients with hemodialysis (HD). However, the impact of BMI on the mortality of older HD patients is not known. We investigated whether the obesity paradox could be observed in elderly patients with HD.

Methods : End-stage kidney disease patients over 70 years who newly initiated maintenance hemodialysis were enrolled in a retrospective nationwide cohort data of the Korean Society of Geriatric Nephrology (KSGN) between 2010 and 2017. The patients were divided into 5 BMI categories with a reference group ranging from 20.0 to 25.0. The association of BMI with overall and 6-month mortality was investigated using Cox proportional hazard regression analysis.

Results : A total of 2336 elderly patients with HD were included and 409 died (17.5%) during the study period. Kaplan–Meier curves showed significant differences between BMI categories in overall and 6-month mortality (both $P < 0.001$). The underweight group ($BMI < 18.5$) revealed a significantly increased risk of overall (hazard ratio [HR] 1.30, 95% confidence interval [CI] 1.07–1.59, $P = 0.009$) and 6-month mortality (HR 1.43, 95% CI 1.02–2.01, $P = 0.040$). However, no survival advantages were found in the overweight ($25 \leq BMI < 30$) and obesity ($BMI > 30$) groups compared to the reference group. Multivariate linear regression analysis showed that BMI was associated with sex, diabetes, immobility, blood urea nitrogen, sodium, and calcium.

Conclusions : Underweight is an independent risk factor for long- and short-term outcomes in elderly incident HD patients. The protective effect of overweight or obesity on survival is attenuated in elderly patients with HD, not showing the obesity paradox. The decreased association between obesity and mortality might be attributable to multiple underlying factors observed in geriatric patients.



cox.jpg

Table. Factors related with BMI in linear regression model

	Univariate			Multivariate		
	B (SE)	β	P	B (SE)	β	P
Age	-0.05 (0.02)	-0.07	0.001	-0.03 (0.02)	-0.04	0.068
Sex						
(ref: male)	0.71 (0.16)	0.09	<0.001	0.81 (0.17)	0.11	<0.001
HT	1.06 (0.25)	0.09	<0.001	0.50 (0.28)	0.04	0.068
Diabetes	1.87 (0.16)	0.24	<0.001	1.87 (0.17)	0.24	<0.001
Mobility						
(ref : 1)	-1.13 (0.22)	-0.11	<0.001	-1.09 (0.26)	-0.10	<0.001
Albumin	0.27 (0.14)	0.04	0.049	0.21 (0.11)	0.04	0.061
Creatinine	-0.03 (0.03)	-0.03	0.244			
BUN	-0.01 (0.00)	-0.10	<0.001	-0.01 (0.00)	-0.07	0.004
Sodium	0.03 (0.01)	0.06	0.007	0.03 (0.01)	0.05	0.041
Calcium	-0.26 (0.09)	-0.07	0.003	-0.23 (0.09)	-0.06	0.013
Total CO2	0.04 (0.02)	0.05	0.024	0.01 (0.02)	0.02	0.474