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Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

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Mediterranean lifestyle is associated with a lower risk of chronic kidney disease: population-based prospective study

Hyo Jeong Kim[1], Hee Byung Koh[3], Chan-Young Jung[4], Hyung Woo Kim[2], Jung Tak Park[2], Tae Ik Chang[5], Tae-Hyun Yoo[2], Shin-Wook Kang[2], Seung Hyeok Han[2]
[1]Department of Internal Medicine-Nephrology, Gangnam Severance Hospital, Korea, Republic of
[2]Department of Internal Medicine-Nephrology, Catholic Kwandong University International St. Mary's Hospital, Korea, Republic of
[3]Department of Internal Medicine-Nephrology, Asan Medical Center, Korea, Republic of
[4]Department of Internal Medicine-Nephrology, Severance Hospital, Korea, Republic of
[5]Department of Internal Medicine-Nephrology, National Health Insurance Service Ilsan Hospital, Korea, Republic of

Objectives : There is evidence supporting the benefits of Mediterranean lifestyle in preventing chronic non-communicable diseases. However, the association between Mediterranean lifestyle and the development of chronic kidney disease (CKD) remains unclear.
Methods : In this population-based prospective observational cohort study from the UK biobank cohort between 2006 and 2010, we included 157,715 participants who completed dietary assessment at least twice and had no CKD. The main predictor was the Mediterranean Lifestyle (MEDLIFE) index, which was assessed based on three blocks: 1) Mediterranean food consumption, 2) Mediterranean dietary habits, and 3) physical activity, rest, social habits, and conviviality. The primary outcome was incident CKD, defined by International Classification of Disease 10 codes or Operating Procedure Codes Supplement 4 codes. The secondary outcome was all-cause mortality.
Results : At baseline, individuals with higher MEDLIFE index score had lower blood pressure, body mass index, and were less likely to have diabetes, hypertension, and cardiovascular disease. During a median follow-up of 11.2 years, primary outcome events occurred in 5,681 (3.6%) participants. In Cox regression models, the adjusted hazard ratio (aHR) per 1- increase in MEDLIFE index for incident CKD was 0.97 (95% confidence interval [CI], 0.96-0.98). Compared with quartile 1 of MEDLIFE index, the aHRs (95% CIs) for the quartiles 2 to 4 were 0.86 (0.90-1.03), 0.91 (0.85-0.98), and 0.78 (0.71-0.85), respectively. In secondary analysis, the risk of mortality decreased as MEDLIFE index increased, with the aHRs (95% CIs) for the quartiles 2 to 4 being 0.98 (0.92-1.04), 0.93 (0.87-0.99), and 0.88 (0.82-0.94), respectively.
Conclusions : Higher MEDLIFE index was associated with a lower risk of incident CKD and all-cause mortality.

table 1.png

Table 1. The HRs for the incident CKD outcomes based on the MEDLIFE index.

	per 1 increase		MEDLIFE Index								P for trend
			Quartile 1 Score 0-7		Quartile 2 Score 8-9		Quartile 3 Score 10-11		Quartile 4 Score 12-23		
	HR (95% CI)	P	HR (95% CI)	P	HR (95% CI)	P	HR (95% CI)	P	HR (95% CI)	P	
Primary outcome											
Model1[1]	0.96 (0.95 - 0.97)	<0.001	reference		0.98 (0.92 - 1.05)	0.607	0.93 (0.86 - 0.99)	0.036	0.74 (0.68 - 0.81)	<0.001	<0.001
Model2[2]	0.96 (0.95 - 0.97)	<0.001	reference		0.94 (0.88 - 1.01)	0.087	0.88 (0.82 - 0.94)	<0.001	0.73 (0.67 - 0.79)	<0.001	<0.001
Model3[3]	0.97 (0.96 - 0.98)	<0.001	reference		0.96 (0.90 - 1.03)	0.249	0.91 (0.85 - 0.98)	0.013	0.78 (0.71 - 0.85)	<0.001	<0.001
Secondary outcome											
Model1[1]	0.98 (0.97 - 0.99)	<0.001	reference		1.02 (0.96 - 1.08)	0.605	0.98 (0.92 - 1.04)	0.450	0.88 (0.82 - 0.95)	0.001	<0.001
Model2[2]	0.98 (0.97 -0.99)	<0.001	reference		0.99 (0.93 - 1.05)	0.656	0.94 (0.88 - 1.00)	0.058	0.89 (0.83 - 0.96)	0.001	<0.001
Model3[3]	0.98 (0.97 - 0.99)	<0.001	reference		0.98 (0.92 - 1.04)	0.470	0.93 (0.87 - 0.99)	0.025	0.88 (0.82 - 0.94)	<0.001	<0.001

Cox regression model was performed. The primary outcome was incident CKD, defined as the presence of ICD-10 or OPCS 4 codes in any primary care or inpatient hospital records. The secondary outcome was all-cause mortality.

[1] Model 1: unadjusted

[2] Model 2: age, sex, race, town deprivation index, smoking, BMI.

[3] Model 3: Model 2 plus history of hypertension, diabetes, and cardiovascular, eGFR, UACR, dietary energy intake

[4] P for linear trend was calculated by treating quartiles as a continuous variable

Abbreviations: BMI, body mass index; CI, confidence interval; CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; HR, hazard ratio; ICD, international classification of disease; OPCS, operating procedure codes supplement; SD, standard deviation; UACR, urine albumin-creatinine ratio.