THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

Abstract Submission No.: A-0897

Safety and Impact of the Mediterranean Diet in Patients with Chronic Kidney Disease: A Pilot Randomized Crossover Trial

Jung Eun Lee[1], Young Su Joo[1], Hae-Ryong Yun[1], Yu-Jin Kwon[2], Hye Sun Lee[4], Ji-Won Lee[3]
[1]Department of Internal Medicine-Nephrology, Yongin Severance Hospital, Korea, Republic of
[2]Department of Family Medicine, Yongin Severance Hospital, Korea, Republic of
[3]Department of Family Medicine, Gangnam Severance Hospital, Korea, Republic of
[4]Department of Biostatistics, Gangnam Severance Hospital, Korea, Republic of

Objectives : Emerging evidence highlights the potential advantages of the Mediterranean diet (MD) in preserving kidney function and slowing chronic kidney disease (CKD) progression. However, interventional studies on the MD are scarce in East Asian populations. This randomized crossover trial aimed to assess the safety and short-term impact of the Mediterranean Proper Optimal Balance (MEDi-POB) diet in Korean patients with stage 3–4 CKD.
Methods : Fifty patients with CKD were randomly assigned to two groups, each starting with a different 4-week intervention, followed by a 4-week washout period, followed by a switch to the other 4-week intervention. During the MEDi-POB intervention, participants received home delivery of meals twice daily, 5 days a week, while the control intervention comprised being instructed to follow a conventional diet for patients with CKD.
Results : Dietary fat, fiber, and niacin intake were significantly higher following the MEDi-POB diet than after following the control diet. The MEDi-POB diet also yielded slightly increased total CO_2 levels, indicating effective management of metabolic acidosis. Conversely, sodium and copper intake were significantly lower with the MEDi-POB diet. Caloric intake increased, but body mass index slightly decreased from baseline after the MEDi-POB diet. Dietary potassium intake showed a non-significant increase, with no significant changes in serum and urine potassium levels. Kidney function remained well preserved following the MEDi-POB diet.
Conclusions : The MEDi-POB diet offers significant benefits, addressing undernutrition, promoting balanced fiber and micronutrient intake, and preventing obesity, all while ensuring safety in terms of potassium concentrations and preservation of kidney function.

Fig 1.jpg

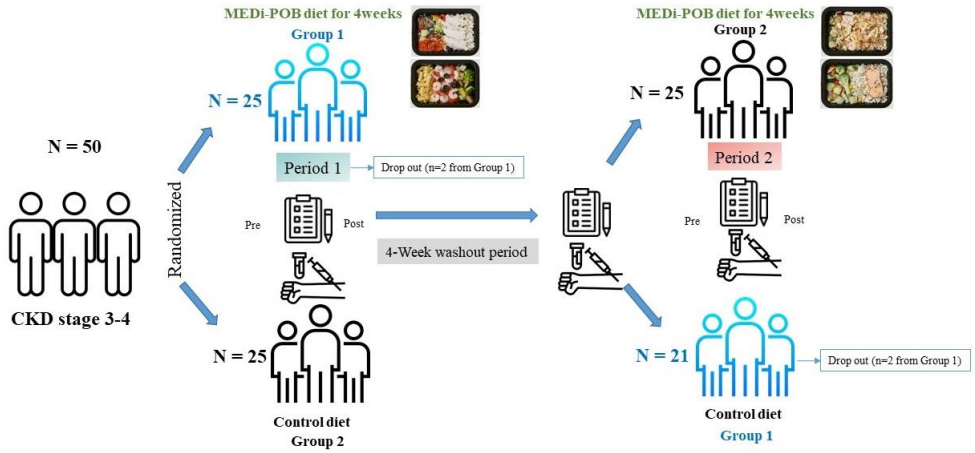

Fig 1.jpg

	Medi-POB diet			Control diet		
	Pre	Post	P-value	Pre	Post	P-value
SBP, mmHg	135.3 ± 13.6	136.1 ± 17.4	0.494	135.5 ± 13.2	136.7 ± 17.4	0.591
DBP, mmHg	68.9 ± 13.8	70.6 ± 12.6	0.451	68.5 ± 13.3	70.0 ± 14.4	0.318
BMI, kg/m^2	26.7 ± 3.7	26.6 ± 3.5	0.016	26.9 ± 3.7	26.8 ± 3.7	0.976
Blood analysis						
Total cholesterol, mg/dl	145.0 ± 29.3	140.7 ± 36.9	0.092	147.7 ± 29.9	146.0 ± 27.8	0.461
Triglyceride, mg/dl	141.0 ± 67.0	136.6 ± 60.9	0.359	138.2 ± 70.7	134.3 ± 60.2	0.606
HDL-C, mg/dl	47.5 ± 13.8	46.1 ± 13.4	0.417	47.7 ± 13.6	46.9 ± 13.8	0.340
LDL-C, mg/dl	81.0 ± 28.5	81.4 ± 29.5	0.774	84.4 ± 27.2	84.1 ± 25.8	0.855
Glucose, mg/dl	119.9 ± 40.0	120.1 ± 45.8	0.989	116.4 ± 40.1	113.1 ± 30.8	0.624
Calcium	9.2 ± 0.4	9.2 ± 0.4	0.913	9.1 ± 0.4	9.1 ± 0.4	0.867
Phosphate	3.7 ± 0.6	3.6 ± 0.6	0.674	3.5 ± 0.5	3.6 ± 0.5	0.202
Magnesium	2.08 ± 0.18	2.10 ± 0.22	0.271	2.06 ± 0.18	2.06 ± 0.21	0.984
25-hydroxy Vitamin D	27.5 ± 13.4	29.2 ± 11.8	0.116	28.4 ± 12.4	28.9 ± 12.9	0.936
PTH	56.3 ± 36.4	58.8 ± 34.9	0.774	61.5 ± 38.9	59.1 ± 35.5	0.506
Total protein	6.8 ± 0.4	6.9 ± 0.4	0.087	6.8 ± 0.4	6.9 ± 0.4	0.029
Albumin	4.3 ± 0.3	4.3 ± 0.3	0.599	4.3 ± 0.3	4.3 ± 0.3	0.476
BUN	29.0 ± 9.7	28.9 ± 11.6	0.593	29.3 ± 10.7	29.9 ± 9.3	0.557
Creatinine	1.77 ± 0.56	1.81 ± 0.62	0.911	1.75 ± 0.59	1.83 ± 0.60	0.008
Cystatin C	1.86 ± 0.49	1.89 ± 0.53	0.519	1.78 ± 0.45	1.87 ± 0.49	0.036
eGFR (MDRD)	38.0 ± 12.1	38.2 ± 13.1	0.292	39.4 ± 12.9	37.0 ± 12.0	0.009
eGFR (CKD-EPI)	38.7 ± 12.9	38.8 ± 14.1	0.287	40.0 ± 13.7	37.4 ± 12.6	0.010
e GFR (cystatin c)	36.1 ± 13.9	35.7 ± 13.7	0.580	37.6 ± 12.7	35.7 ± 13.5	0.036
Sodium	140.3 ± 2.0	139.8 ± 2.3	0.134	140.5 ± 2.2	140.0 ± 1.82	0.116
Potassium	4.81 ± 0.49	4.80 ± 0.51	0.634	4.87 ± 0.44	4.85 ± 0.50	0.845
Chloride	105.3 ± 3.0	104.2 ± 3.3	0.004	105.4 ± 3.2	104.8 ± 2.4	0.104
Total CO2	24.2 ± 4.2	25.1 ± 2.5	0.082	24.7 ± 2.5	24.3 ± 2.7	0.349
Human FGF23	19.5 ± 17.9	19.7 ± 14.9	0.802	16.8 ± 11.9	19.8 ± 13.4	0.027
Adiponectin	19375.6 ± 23957.6	21667.3 ± 34002.0	0.279	19447.4 ± 30764.0	19072.2±26520.5	0.785
Indoxyl sulfate	0.33 ± 0.27	0.31± 0.21	0.447	0.36 ± 0.29	0.42 ± 0.37	0.127
Urine analysis						
Protein	56.1± 72.6	53.7 ± 80.4	0.959	58.5 ± 94.5	52.4 ± 78.8	0.331
Creatinine	103.7 ± 51.8	113.0 ± 55.3	0.241	99.5 ± 49.5	101.8 ± 59.1	0.790
Protein/Cr ratio	568.3 ± 671.0	511.3 ± 658.0	0.487	614.7 ± 715.9	602.9 ± 771.6	0.825
Sodium	83.1 ± 31.8	78.2 ± 33.9	0.379	87.8 ± 34.1	85.6 ± 36.1	0.788
Potassium	40.5 ± 20.7	42.1 ± 21.4	0.569	45.0 ± 22.4	40.4 ± 21.1	0.105