KSN 2019
Seoul, Korea · May 23 - 26

Abstract Type : Poster
Abstract Submission No. : PO-1203

Muscle Mass, Physical Activity and Chronic Kidney Disease in Older Adults

Soo Jeong Choi[1], Gang Jee Ko[2], Min Sung Lee[1], Sujung Park[1], Byung chul You[2], Moo Yong Park[1], Jin Kuk Kim[1], Seung Duk Hwang[1]
[1]Department of Internal Medicine-Nephrology, Soonchunhyang University Bucheon Hospital, Korea, Republic of
[2]Department of Internal Medicine-Nephrology, Korea University Guro Hospital, Korea, Republic of

Objectives: Sarcopenia can affect the prognosis of patients with chronic kidney disease (CKD). Exercise and nutritional therapy are carried out to prevent processing sarcopenia. CKD and sarcopenia increase in aging process. However, there are only few reports on physical activity and CKD stage in older people and their association with sarcopenia. The aim of this study is to examine the association between CKD and physical activity in older adults.

Methods: This cross-sectional study based on the Korean Frailty and Aging Cohort study represents a population of 3014 people aged 70 years or over. Anthropometric, physical performance measurements and baseline laboratory data were collected. CKD was defined by estimated glomerular filtration rate < 60ml/min/1.73m^2.

Results: The mean age of the participants was 76.0±3.9 years old and females compromised 52.5%. The male and female CKD patients were 231 and 160 (16.1 vs 10.1 %, p<0.001). Appendicular skeletal muscle mass (ASM) was negative correlated with serum creatinine in males (ß=-0.414, 95% CI -0.811~-0.160, p=0.042), while ASM was not different with serum creatinine in females. Patients with slow speed gait increases according to CKD stage. While patients with less ASM and slow sit-to-stand time increased according to CKD stage in males, those were no different in female. Patients with slow up-to-go time increased according to CKD stage in females(table 1). ASM and physical activity except handgrip power were associated with CKD stage after adjusting sex, age, height, weight and diabetes.

Conclusions: Low ASM and physical activity increase according to CKD stage in older people. But more detailed study about sex difference in CKD and sarcopenia is needed for older people.

Table 1. Comparison of anthropometry and exercise tests according to CKD stage

Table 1. Comparison of anthropometry and exercise tests according to CKD stage

		GFR								
		>90		60~90		45~60		<45		
N		n	(%)	n	(%)	n	(%)	n	(%)	p-value
Less ASMI	Male	2	(1.2)	8	(0.8)	1	(0.6)	3	(5.6)	0.006
	Female	0	(0.0)	3	(0.0)	0	(0.0)	0	(0.0)	0.749
Slow gait speed (<0.8m/min)	Male	9	(5.3)	39	(6.3)	16	(9.0)	7	(13.0)	0.001
	Female	13	(4.4)	97	(8.6)	16	(13.1)	9	(23.7)	<0.001
Low hand grip power	Male	28	(16.5)	167	(16.2)	31	(17.5)	15	(27.8)	0.174
(Male<26, female<18)	Female	69	(23.4)	280	(24.8)	39	(32.0)	15	(39.5)	0.056
Slow sit to stand time(>11sec)	Male	4	(2.4)	10	(1.0)	6	(3.4)	2	(3.8)	0.035
	Female	11	(3.7)	63	(5.7)	10	(8.3)	3	(8.3)	0.242
Slow up to go time (>10sc)	Male	6	(3.5)	28	(2.7)	9	(5.1)	2	(3.7)	0.404
	Female	6	(2.0)	70	(6.2)	15	(12.3)	10	(26.5)	<0.001

P-values were calculated by chisquare test