Diagnostic components of sarcopenia in kidney transplant recipients- prevalence and associated factors study in a single center

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Introduction

Chronic kidney disease (CKD) contributes to secondary sarcopenia which may be associated with adverse outcome. Kidney transplantation restores the kidney function but its impact on sarcopenia remains uncertain. As sarcopenia is a potentially reversible condition, understanding contributing factors for the development of sarcopenia is important to allow proper intervention

Aim

This study aimed to assess the prevalence and the predictors/associated factors of sarcopenia in kidney transplant recipients (KTRs).

Methodology

This is a cross-sectional study of stable KTRS at transplant clinic of University of Malaya. Consented patients will be subjected to the laboratory, psychometric questionnaire, and bio-impedance analysis evaluation. Sarcopenia was assessed based on the European Working Group on Sarcopenia in Older people (EWGSOP2) which include evaluation for presence of low appendicular skeletal muscle mass, low muscle strength, and/or low muscle performance.

Conclusion

Sarcopenia is an established pathological entity in KTRS and its aetiology may be multifactorial. Serum albumin level can be useful as a predictor for this aforementioned condition and potentially amenable for intervention.

Parameters	Number (Total 113)	Percentage. %
Young (18-44 years old)	34	30.1
Middle (45-59 years old)	52	46
Elderly (60-79 years old)	27	23.9
Diagnosis of sarcopenia (EWGSOP2)		
No sarcopenia	96	85
Probable sarcopenia	17	15
Sarcopenia	0	0
Appendicular skeletal muscle mass		
Normal	113	100
Low	0	0
Muscle strength		
Normal	98	86.7
Low	15	13.3
Physical performance		
Normal	98	86.7
Low	15	13.3

Variable	Probable sarcopenia	No sarcopenia	P-value
Age			
Young (18-44)	5 (4.4%)	29 (25.9%)	0.947
Middle (45-59)	3 (2.6%)	49 (43.7%)	0.011
Elderly (>60)	9 (8.0%)	18 (16.1%)	0.002
Body mass index (BMI)	22 (20.00-29.55)	23.96 (21.5-27.9)	0.039
Kidney transplant vintage (Years)	15 (6-23)	8 (4-13.75)	0.027
Serum albumin, g/L	37.63±2.89	39.41±2.92	0.026
Skeletal muscle mass (SMM), Kg	21.8 (17.4-27.1)	26.7 (20-30.8)	0.015
Arm circumferences, Cm	27.71±3.19	30.26±4.36	0.026
Phase angle (PhA)	4.459±0.56	5.11±0.80	0.020

Univariate	95% CI		
Parameter (Adjusted for age)	B (OR)	Lower	Upper	P-value
Kidney transplant vintage (years)	1.073	1.00	1.14	0.042
Serum albumin g/L	0.82	0.68	0.99	0.040
Skeletal muscle mass (SMM), Kg	0.90	0.83	0.99	0.032
Arm circumferences, Cm	0.84	0.72	0.98	0.033
Phase angle (PhA)	0.35	0.16	0.76	0.08

Multiple logistic regression	95% CI		
Parameter (adjusted for age)	B (OR)	Lower	Upper	P-value
Serum albumin g/L	0.137	0.03	0.62	0.01

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