What Is The Best Method For Assessing Functional Status In Elderly Patients With Chronic Kidney Disease?

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OBJECTIVES

Chronic kidney disease (CKD) patients suffer more from functional decline with increasing age than the general population. Functional decline has been associated with adverse outcomes including mortality and hospitalisation. Physical function is multidimensional and the gold standard assessment tools are difficult to implement in clinical practice. There is thus a need for short screening tests that can routinely be used in clinical practice. This systematic review aimed to determine the best screening assessment method for functional status in frail or elderly patients with CKD.

METHODS

We searched for prospective and cross sectional studies indexed in EMBASE, PubMed, Web of Science, CINAHL and Cochrane, that evaluated physical function in older (age > 65 years) patients with CKD (eGFR > 45 ml/min). We included studies that compared assessment tools to the standard (SF-36 Physical function subscale-SF36 PF). We also included studies that provided data on measures of reliability, for assessment tools in the aforementioned cohort.

RESULTS

From an initial 1080 references, 10 studies were included. Self-reported tools on physical performance and physical activity assessed by Low Physical Activity Questionnaire (LoPAQ) correlated significantly with the SF36 PF score (Table 1).Lower Gait speed(0.6 -0.8 m/s vs 1.0 m/s), an objective assessment of physical performance was associated with lower SF36 PF scores by an estimate of -8.20 (-13.57 to -2.82). Objective measures on physical performance including Sit to Stand, 6 Minute Walk, Heel Raise Tests as well as self-reported measures of physical performance showed good interrater and test-retest reliability (Table 1).

Table 1

Measure (Author, year)	Type	Cohort	Age (years)	vs SF36 PF	Reliability Measures
KPS Sclaurezo (2013)	SR -Physical Performance	203 HD	72.± 12	p>0.001	
KPS Rebollo (1998)	SR -Physical Performance	100 HD 24 TP	>65	r = 0.604, p>0.01	
IFS Thomas-Hawkins (1998)	SR-Physical performance	175 HD		r = 0.14 to 0.53	IRR α=0.86
IFS (Dialysis –R) Thomas-Hawkins (2005)	SR-Physical performance	186 HD	62 ± 15		IC α= 0.88
Gait speed Kutner (2015)	FT -Physical performance	756 HD	20 -92	Effect estimate -8.20 gait speed 0.6–0.8 vs >1m/s)	
LoPAQ Johansen (2015)	SR - Physical activity	68 HD	59 ± 14	rho = 0.64, p < 0.001	
Sit to Stand 10 Saito (2007)	FT-Physical performance	30 HD	75 ± 8		IRR - ICC=0.98
Sit to Stand 10 Segura-Norti (2011)	FT-Physical performance	39 HD	60 ± 16		TRR - ICC=0.88 to 0.89
Sit to Stand 60 Segura-Norti (2011)	FT-Physical performance	39 HD	60 ±16		TRR - ICC = 0.97
6 minute walk Segura-Norti (2011)	FT-Physical performance	39 HD	60 ± 16		TRR- ICC = 0.94
One Heel Raise Segura-Norti (2011)	FT-Physical performance	39 HD	60 ± 16		TRR- ICC= 0.94-0.97
Hand Grip Strength Segura-Norti (2011)	Muscle strength	39 HD	60 ± 16		TRR- ICC = 0.95-0.96
QUE(HD) Upper limb function in HD Kutsuna (2011)	SR-Physical performance	83 HD	66 ± 8		IC - α = 0.87-0.92 TRR- ICC = 0.92-0.95
4 item ADL Farrokhi et al (2013)	SR-Physical performance	167 HD	75 ± 6		IC - α =0.66

HD = haemodialysis, TP = Transplant, KPS = Karnofsky Performance scale, SR = self-report, FT = field test, IFS = Inventory of Functional Status, IRR = Interrater Reliability, IC =Internal Consistency, TRR = Test-Retest Reliability, ADL = Activities of Daily Living.

CONCLUSIONS

Short assessment tools that provide objective and subjective measures of physical function with good validity and reliability have been identified. Self reported scales combined with field tests could used to regularly assess physical function in older patients with CKD, in routine nephrology practice.

REFERENCES:

1. Sclauzero P, Galli G, Barbati G et al. Role of components of frailty on quality of life in dialysis patients: a cross-sectional study. J Ren Care.2013;39(2):96-10.
2. Rebollo P, Ortega F, Baltar JM et al. Health-related quality of life (HRQOL) in end stage renal disease (ESRD) patients over 65 years. Geriatr Nephrol Urol. 1998;8(2):85-94
3. Thomas-Hawkins C, Fawcett J, Tulman L. The Inventory of Functional Status-Dialysis: development and testing. ANNA J. 1998 Oct;25(5):483-90
4. Kutner NG, Zhang R, Huang Y, Painter P. Gait Speed and Mortality, Hospitalization, and Functional Status Change Among Hemodialysis Patients: A US Renal Data System Special Study. Am J Kidney Dis. 2015 Aug;66(2):297-304
5. Johansen KL, Painter P, Delgado C, Doyle J. Characterization of physical activity and sitting time among patients on hemodialysis using a new physical activity instrument.. J Ren Nutr. 2015 Jan;25(1):25-30.
6. Saito GK1, Jassal SV. The 'Sit-to-Scale' score--a pilot study to develop an easily applied score to follow functional status in elderly dialysis patients. Nephrol Dial Transplant. 2007 Nov;22(11):3318-21.
7. Segura-Ortí E, Martínez-Olmos FJ. Test-retest reliability and minimal detectable change scores for sit-to-stand-to-sit tests, the six-minute walk test, the one-leg heel-rise test, and handgrip strength in people undergoing hemodialysis. Phys Ther. 2011 Aug;91(8):1244-52.
8. Kutsuna T1, Matsunaga A, Takagi Y, Motohashi S et al. Development of a novel questionnaire evaluating disability in activities of daily living in the upper extremities of patients undergoing maintenance hemodialysis. Ther Apher Dial. 2011 Apr;15(2):185-94
9. Farrokhi F1, Jassal SV. Routine use of an abbreviated 4-item scale to assess dependence in essential activities of daily living amongst elderly hemodialysis patients: a validation study. Int Urol Nephrol. 2013 Feb;45(1):259-64
10. Thomas-Hawkins C. Assessing role activities of individuals receiving long-term hemodialysis: psychometric testing of the revised Inventory of Functional Status-Dialysis (IFS-Dialysis). Int J Nurs Stud. 2005 Aug;42(6):687-94

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