

노인재활

게시일시 및 장소 : 10 월 18 일(금) 08:30-12:20 Room G(3F)

질의응답 일시 및 장소 : 10 월 18 일(금) 10:00-10:45 Room G(3F)

## **P 1-38**

### **Physical performance predictors of self-reported physical function and quality of life after uni-TKA**

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#### **Objective**

This study was undertaken to identify postoperative physical performance factors predictive of self-reported physical function and quality of life at 3 month after unilateral total knee arthroplasty (TKA).

#### **Methods**

In this cross-sectional study, we assessed a total of 158 patients (24 males and 134 females; average age 72.6±5.8 years) who underwent unilateral primary TKA. All patients completed performance-based physical function tests including stair climbing test (SCT), 6-minute walk test (6MWT), timed up and go test (TUG), instrumental gait analysis for spatio-temporal parameters and isometric knee flexor and extensor strength of the surgical and nonsurgical knees. Self-reported physical function and pain were measured using the Western Ontario McMaster Universities Osteoarthritis Index (WOMAC) and Visual Analog Scale (VAS), and self-reported quality of life was measured using the Euro-QOL five dimensions (EQ-5D) questionnaire.

#### **Results**

In the bivariate analyses, the postoperative WOMAC-function score had a significant positive correlation with postoperative age, WOMAC-pain score, WOMAC-stiffness score, TUG tests, SCT ascent, SCT descent, VAS, deficit of extensor and a significant negative correlation with postoperative EQ-5D, stride length, peak torque (PT) extensor of non-surgical knee, PT flexor of non-surgical knee. The postoperative EQ-5D score had a significant positive correlation with postoperative 6MWT, cadence, PT extensor of non-surgical knee, PT flexor of non-surgical knee, and a significant negative correlation with postoperative age, WOMAC-pain, WOMAC-stiffness, WOMAC-function, TUG, SCT ascent, SCT descent, VAS. In the linear regression analyses after adjustment for demographics and anthropometrics variables, the postoperative WOMAC-function score are

significantly associated with age, WOMAC-pain, stride length, PT flexor of non-surgical knee and deficit of extensor and the postoperative EQ-5D score are significantly associated with age, WOMAC-pain, SCT ascent, and cadence.

## Conclusions

This study demonstrated that self-reported physical function and quality of life were an important explanatory factor for functional recovery in patients 3 month after unilateral TKA, as reflected by WOMAC-function and EQ-5D in the early postoperative period.

Table 1. Demographic and Disease-Related Characteristics of the Subjects (N=158).

Variables	Values
Age (years)	72.6 ± 5.8
Sex, males/females	24 (15.2) / 134 (84.8)
BMI (kg/m <sup>2</sup> )	25.6 ± 3.0
K-L grades	
Grade 3	27 (17.1)
Grade 4	131 (82.9)
Comorbidities	
Osteoporosis	81 (51.3)
Presarcopenia	7 (4.4)
Degenerative spine disease	26 (16.5)
Diabetes mellitus	29 (18.4)
Hypertension	106 (67.1)

Values represent mean ± standard deviation or number (%) of cases

Abbreviations: BMI, Body Mass Index, K-L, Kellgren-Lawrence

Table 2. Correlation among postoperative self-reported physical function and quality of life and physical performance in patients 3 Months after Unilateral TKA.

Variables	Values	
	Correlation coefficients (r)	Correlation coefficients (r)
	WOMAC function	EQ-5D
Age (years)	0.29*	-0.30*
BMI (kg/m <sup>2</sup> )	-0.08	-0.01
WOMAC-Pain	0.71*	-0.67*
WOMAC-Stiffness	0.24*	-0.16*
WOMAC-Function	1	-0.70*
6MWT (m)	0.01	0.31*
TUG (sec)	0.22*	-0.42*
SCT ascent	0.24*	-0.41*
SCT descent	0.22*	-0.43*
EQ-5D	-0.70*	1
Affected ROM flexion	0.10	-0.07
Affected ROM extension	-0.14	0.14*
VAS	0.24*	-0.54*
Gait Speed (m/sec)	-0.02	-0.03
Cadence (steps/min)	-0.03	0.22*
Stride length (cm)	-0.19*	0.10
Gait cycle duration (sec)	-0.04	0.04
Stance phase duration (% of gait cycle)	0.00	-0.10
Swing phase duration (% of gait cycle)	0.12	-0.06
Double support duration (% of gait cycle)	0.11	-0.02
Single support duration (% of gait cycle)	0.02	-0.09
PT extensor of surgical knee (Nm)	-0.15	0.14
PT extensor of non-surgical knee (Nm)	-0.38*	0.24*
PT flexor of surgical knee (Nm)	-0.13	0.11
PT flexor of non-surgical knee (Nm)	-0.47*	0.27*
Deficit of extensor (%)	0.16*	-0.08
Deficit of flexor (%)	0.02	0.13

Values represent correlation coefficients (r)

\*p<0.05

Table 3. Factors predictive of self-reported physical function and quality of life by multi-variant linear regression analysis.

Outcome/Independent predictor	Standardized (β)	p-value	Adjusted R <sup>2</sup>
Postoperative WOMAC-Function			0.64
Age	0.15	<0.01	
WOMAC-Pain	0.59	<0.01	
Stride length (cm)	-0.15	0.01	
PT flexor of non-surgical knee (Nm)	-0.31	<0.01	
Deficit of extensor (%)	0.16	<0.01	
Postoperative EQ-5D			0.58
Age	-0.18	<0.01	
WOMAC pain	-0.62	<0.01	
SCT ascent	-0.18	0.01	
Cadence (steps/min)	0.13	0.03	

The Logistic Regression Analyses adjusting for age, sex, BMI