Short communication

P 161 – Correlation between patient reported outcome measures and objective clinical findings in the knee arthroplasty population

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1. Introduction

Up to 30% of knee replacement patients report to be dissatisfied with the results of their surgery, mainly due to restrictions in motion and pain [1]. However, questionnaire-based studies that assess activities of daily living report high functionality levels in this population. Yet, self-reported perception of function is known to be biased by several affective factors such as depression or a patients beliefs and expectations [2–4]. In contrast, performance-based measures (PBMs) are objective clinical tests (e.g. Tinetti, Timed up and go test) which in turn can be related to functionality [5,6]. To the best of our knowledge there is no evidence regarding the correlation between the outcome of the PROMs and PBMs. Therefore the aim of the present study will be to evaluate the relation between functionality assessed by means of PROMs and PBMs in the knee arthroplasty population.

2. Research question

Do PROMs relate to PBMs in the knee arthroplasty population?

3. Methods

Twenty-seven knee replacement subjects were recruited to participate in this study. Subjects were evaluated at 3 days and 6 weeks post

knee replacement surgery. The following questionnaires were used to evaluate subjects' functionality: the Knee injury and Osteoarthritis Outcome Score (KOOS) and 12-item Oxford Knee Score (OKS). The Timed Up and Go test and a Tinetti fall risk assessment were used as PBMs. Correlations between the outcome of PROMs and PBMs were calculated using intra-class correlation coefficients.

4. Results

Resulting ICCs are presented in Tables 1 and 2. Low to moderate ICCs were found between PROMs and PBMs at 3 days and 6 weeks post knee replacement surgery. The highest correlation (ICC = 0.59) was found between the time needed to perform the TUG test and resulting OKS-score. Low correlations were demonstrated between KOOS subscales and the outcome of the Tinetti test at discharge from the hospital and at 6 weeks post knee surgery. Higher ICCs (0.08–0.54) were demonstrated between the KOOS subscales and the TUG test at 6 weeks post knee surgery compared to the correlations found at discharge (0.08–0.36).

5. Discussion

The current study demonstrates rather low correlations between PROMs and PBMs at discharge and 6 weeks after knee replacement

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Table 1

Intra-class correlation coefficients between patient reported outcome and performance-based measures at 3 days post knee replacement surgery.

	TINETTI	TINETTI GAIT	TINETTI BALANS	TUG
KOOS PAIN	−0.34	−0.29	−0.21	0.08
KOOS SYMPTOMS	−0.38	−0.43	−0.12	0.34
KOOS ADL	−0.24	−0.25	−0.09	0.18
KOOS SPORTS	−0.32	−0.08	−0.39	−0.06
KOOS QOL	−0.57	−0.39	−0.43	0.36
OKS	0.39	0.39	0.19	−0.59

TUG: Timed Up and Go test; KOOS: Knee injury and Osteoarthritis Outcome Score; ADL: Activities of Daily Living; QOL: Quality of Life; OKS: Oxford Knee Score.

Table 2

Intra-class correlation coefficients between patient reported outcome and performance-based measures at 6 weeks post knee replacement surgery.

	TINETTI	TINETTI GAIT	TINETTI BALANS	TUG
KOOS PAIN	−0.19	−0.31	−0.01	0.08
KOOS SYMPTOMS	−0.29	−0.45	−0.03	0.50
KOOS ADL	−0.39	−0.53	−0.10	0.54
KOOS SPORTS	−0.54	−0.53	−0.37	0.51
KOOS QOL	−0.35	−0.48	−0.10	0.49
OKS	0.06	0.28	−0.19	−0.24

TUG: Timed Up and Go test; KOOS: Knee injury and Osteoarthritis Outcome Score; ADL: Activities of Daily Living; QOL: Quality of Life; OKS: Oxford Knee Score.

surgery. However, higher ICCs can be observed at 6 weeks compared to 3 days post-surgery, implying that PROMs and PBMs are more closely related at a later stage after surgery. The low correlations found in this study may, as suggested by a previous author [7], indicate that PROMs evaluate different outcome dimensions than PBMs. The combination of both PROMs and PBMs might provide clinicians with a better understanding regarding the functional capacity of a patient, and should be assessed simultaneously.

References

- [1] Von Keudell (2018).
- [2] de Achaval (2016).
- [3] Witiw (2018).
- [4] Merrill (2018).
- [5] Schoene (2013).
- [6] Panella (2008).
- [7] Bolink (2015).