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BASELINE PREDICTORS OF UPPER LEG MUSCLE STRENGTH OVER 2 AND 4 YEARS IN SUBJECTS WITH KNEE OSTEOARTHRITIS: DATA FROM THE OSTEOARTHRITIS INITIATIVE

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Background: Muscle weakness is common in patients with knee osteoarthritis (OA). Muscle weakness negatively impacts future functional status, and has been linked to symptomatic and radiographic progression of knee OA. Limited information is available on the course of muscle strength over time in these patients.

Objectives: The aim of the present study is to (i) analyse the course and (ii) to identify baseline predictors for upper leg muscle strength over time in subjects with knee OA.

Methods: Data were obtained from the progression cohort of the Osteoarthritis Initiative (OAI) database. Upper leg muscle strength (in N/kg) was measured at baseline, 24 months and 48 months. Potential baseline predictors were demographic factors (age, gender, race, body height, body weight), metabolic factors (body mass index (BMI), nutrition and vitamin related factors (dietary protein intake, dietary energy intake, vitamin D use, glucosamine use), lifestyle related factors (alcohol consumption, smoking, physical activity), OA-specific factors (KL grade, knee alignment, effusion, pain, pain medication use) and health-related factors (comorbidities and depression). Univariable and multivariable mixed model analyses were performed to analyse the course and to identify baseline predictors for muscle strength over time.

Results: A total of 1390 subjects with knee osteoarthritis were included. The majority of the subjects were female (57.1%), mean ±SD for age was 61.4 ±9.1 and mean ±SD for body mass index was 30.2±4.9. All subjects had frequent knee symptoms and radiographic tibiofemoral knee OA (Kellgren en Lawrence score ≥2) at baseline. Muscle strength was significantly lower at 24 months and 48 months compared to baseline; there was no difference between 24 and 48 months. Older age, being female, higher BMI, being non-Caucasian, lower protein intake (g/kg bodyweight), higher dietary energy intake, alcohol consumption, less physical activity valgus malalignment, higher score on the WOMAC pain subscale and the use of pain medication at baseline were predictors of lower muscle strength over time.

Conclusions: Muscle strength decreased over time between baseline and 24 months, but not between 24 and 48 months, which may be attributed to reaching a plateau or to other reasons. In the present study a number of demographic factors, metabolic factors and factors related to nutrition and vitamins, lifestyle and knee OA were found to be predictive for decreased muscle strength over time. This set of baseline factors can be used to identify patients with knee OA at risk for decline of muscle strength over time. External validation of our model is needed.

Disclosure of Interest: None declared


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PREOPERATIVE PHYSICAL FUNCTION INFLUENCES ON STAIR CLIMBING ABILITY 1 MONTH AFTER TOTAL KNEE ARTHROPLASTY

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Objectives: This study was undertaken to identify preoperative physical performance factors predictive of stair climbing ability 1 month following total knee arthroplasty.