

# **The Effect of Sarcopenia in Patients with Knee Osteoarthritis before and after Total Knee Arthroplasty**

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**INTRODUCTION:** Sarcopenia is an age-related disease that occurs mainly in the elderly, and the likelihood of developing it increases with age. In patients with knee osteoarthritis (OA), pain restricts daily activities, resulting in reduced muscle mass and physical function. Recently, there are reports that sarcopenia is gradually increasing in patients undergoing total knee arthroplasty. The purpose of this study was to investigate the effect of patients with sarcopenia on the clinical aspects of patients after total knee arthroplasty (TKA) compared to patients with osteoarthritis without sarcopenia.

**METHODS:** Among patients who underwent total knee arthroplasty from 2021 to 2022, only patients who had dual energy X-ray absorptiometry were included. Patients were evaluated according to the diagnostic criteria for sarcopenia, which were revised for Asians by the Asian working group for sarcopenia. Both groups were asked to complete the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) score questionnaire to assess patient-reported outcome measures (PROMs) in patients who underwent TKA, preoperatively and at 1 year postoperatively.

**RESULTS:** Among 115 patients, 40 (34.8%) had sarcopenia and 75 (65.2%) had non-sarcopenia. The muscle mass index, appendicular lean mass (ALM)/height<sup>2</sup> (6.4 vs. 5.8, respectively;  $p < 0.001$ ), showed a significant difference. At 1 year after surgery, the WOMAC score showed significantly lower results in pain, function, and total scores in patients with sarcopenia than in non-sarcopenia patients (all  $p < 0.05$ ). In addition, the degree of improvement at 1 year after surgery compared to before surgery also showed inferior results in sarcopenia patients compared to non-sarcopenia patients in all WOMAC subscores (pain, function, and total scores, all  $p < 0.05$ ).

**DISCUSSION AND CONCLUSION:** Sarcopenia is common in patients undergoing TKA for end stage knee OA. Compared to non-sarcopenia patients, patients with sarcopenia showed inferior outcome in PROM at 1 year postoperatively and the degree of improvement.