

Fixed versus mobile weight-bearing prosthesis in total knee arthroplasty

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Purpose: This study was designed to compare clinical, radiological, and general health results of two prostheses (mobile vs. fixed weight-bearing devices) that are used in total knee arthroplasty with a 5-year follow-up.

Methods: This randomized controlled study was conducted from 2004 to 2010 in the Department of Orthopedic Surgery at two university hospitals in Isfahan, Iran. Three hundred patients with expected primary total knee arthroplasty (TKA) without severe deformity (a fixed varus or valgus deformity greater than 20) received fixed weight bearing (n=150) or mobile weight-bearing (n=150) devices. Clinical, radiological, and quality of life outcomes were compared between the two groups at six-month intervals for the first year, after which the comparisons were made annually for the next 4 years.

Results: Both groups had similar baseline characteristics. Although there was significant improvement in both groups, there was no significant difference between the groups with regard to the means of the Knee Society Scores, which were 92 (SD: 12.1) for the fixed weight-bearing device and 93 (SD: 14.2) for the mobile weight-bearing device (n.s.) at the final follow-up point. Radiographs showed that there was no significant difference in prosthetic alignment and no evidence of loosening. After TKA, the SF-36 score increased in both groups, but there was no statistical difference between the groups in quality of life at the final follow-up (62 (12.2) vs. 64 (14.3), n.s). There was no revision after 5 years.

Conclusions: In terms of clinical, radiological or general health outcomes for people who underwent TKA, the results of this study showed no clear advantage of mobile weight-bearing over the fixed weight-bearing prosthesis at the five-year follow-up.

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