Do Younger TKR and THR Patients Have Similar Disability At Time Of Surgery As Older Adults? Lessons From FORCE-TJR

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Introduction: Greater numbers of US total knee replacement (TKR) and total hip replacement (THR) patients are under 65 years of age and of working-age. Numerous reasons have been suggested, ranging from a greater prevalence of arthritis associated with greater use, more sporting injuries, and the epidemic of obesity. A universal concern is that increased arthritis burden will lead to increased disability and unsustainable health-care costs both now and in the future with increasing rates of revision surgery in the years ahead. This raises the question: are younger patients receiving knee replacement prematurely? To address this issue, we compared the severity of operative knee/hip pain and functional status in younger versus older TKR and THR patients, based upon a national research registry.

Methods: Patients undergoing primary TKR and THR from 7/1/11 through 6/30/12 were identified from a national research consortium which enrolls patients from 120 surgeons in 22 US states. Patients, surgeons and hospitals submit data including the SF 36 Physical Component Score (PCS), the Knee injury and Osteoarthritis Outcome Score (KOOS) and Hip Disability and Osteoarthritis Outcome Score (HOOS) and the Oswestry Low Back Pain Disability Questionnaire. The KOOS and HOOS data were used to estimate the Western Ontario and McMaster Universities Arthritis Index (WOMAC); WOMAC scores were transformed to a 0-to-100 scale with lower scores representing worse impairment. We compared those <65 years of age to those who were ≥65 years of age using descriptive statistics.

Results: TKR was performed in 2085 younger (<65) and 3084 older (≥65) patients (40.0% of the study population was younger than 65 years of age.) These younger patients were less likely to be white (86.9% vs. 94.4%, p<0.0001), had a greater body mass index (mean BMI 33.1 vs. 30.5, p<0.0001), and included a larger percentage of smokers (10.2% vs. 2.8%, p<0.0001). There was a striking prevalence of musculo-skeletal co-morbidities in both groups, with half of the total cohort reporting impairment of at least one joint in addition to the operated knee or hip. Moderate/severe pain in additional joints was more common in older patients (57.3%) compared to the younger group (42.9%; p=0.0001). Emotional health (SF MCS) was poorer in younger patients (49.1 vs 52.6, p<0.0001). Younger patients reported greater pain (47.3 vs. 53.9, p<0.0001) and stiffness (38.1 vs. 46.3, p<0.0001) in the operative knee joint and poorer overall function as measured by the PCS, with poorer function in the XXX patients (29.9 vs. 28.5, p<0.0001). Function levels in both groups reflect significant impairment at time of surgery. For THR, 1780 younger (<65) and 1831 older (≥65) patients were evaluated. Younger patients were less likely to be white (90.3 vs. 94.8, p=0.0001) and more likely to be a current smoker (13.2% vs 3.4%, p<0.0001). Both younger and older patients had substantial functional impairment as measured by the PCS, with poorer function in the XXX patients (29.9 vs. 28.5, p<0.0001). Younger patients were overall medically healthier with fewer comorbid conditions (p<0.0001). However, they were also more likely to be heavier (mean BMI 29.9 vs. 28.5, p=0.01), n, p<0.01), with worse mental health (mean MCS 48.4 vs. 51.5, p<0.01).

Discussion: At the time of TKR and THR, younger patients have fewer medical illnesses, but higher rates of obesity and smoking as well as poorer mental health scores. In addition, younger patients have the same or greater functional impairment compared to older patients. This profile suggests that younger patients are seeking definitive treatment to eliminate pain and disability at a stage in their arthritis that is comparable to older patients. Of note, more non-white patients undergo TKR and THR in the younger age group, an encouraging trend toward the remediation of existing racial disparities in TJR use.

Significance: Younger TKR and THR patients have similar pain and disability to older patients at the time of surgery, but younger patients are more obese and more likely to smoke. New strategies to address comorbidities are important.

Acknowledgments:
References:

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