

out of 64). Two years after TKA the majority of TKA patients still required a handrail (57 out of 105).

Persons who underwent TKA had significantly higher adduction moments on the non-operated side compared to operated and control limbs during stair ascent and descent and the pain and strength of the non-operated limb was the best predictor of long term functional outcomes. The strength of the non-operated side measured 1 month after surgery was also significantly predictive of functional changes 2 years after TKA. Of the initial 216 persons in the TKA group, 17 underwent contralateral TKA within 2 years.

Conclusions: Persons with knee OA waited until they experienced remarkable quadriceps weakness, difficulty with stairs, reduced gait speed and increased BMI before undergoing TKA. The rehabilitation protocol in this study utilized an aggressive quadriceps strengthening regimen. This regimen produced significant improvements that were greater than the normal post-operative standard of care. Despite this, some functional variables were still significantly lower than healthy controls, even 2 years after TKA. Persistent kinematic and kinetic gait abnormalities that are present prior to surgery persisted after surgery. This suggests that current rehabilitation protocols, even with aggressive strengthening, do not completely restore function or address biomechanical changes that are adopted prior to TKA. From a functional perspective, persons with end-stage knee OA may benefit from TKA intervention earlier in the course of the disease process. Surgical intervention prior to severe functional disability and quadriceps weakness may result in greater long term outcomes. This may also reduce the magnitude of learned abnormal biomechanical movement patterns that place greater load on the non-operated limb. Rehabilitation protocols that include an aggressive strengthening component should become the standard of care after TKA. In addition, all persons after TKA should have access to weight management or nutrition professionals to counter the increase in BMI seen in our sample. Future research should evaluate the effect of rehabilitation protocols that include a biofeedback protocol to help restore symmetrical movement patterns. This may reduce the load of the non-operated limb and lower the need for subsequent contralateral TKA.

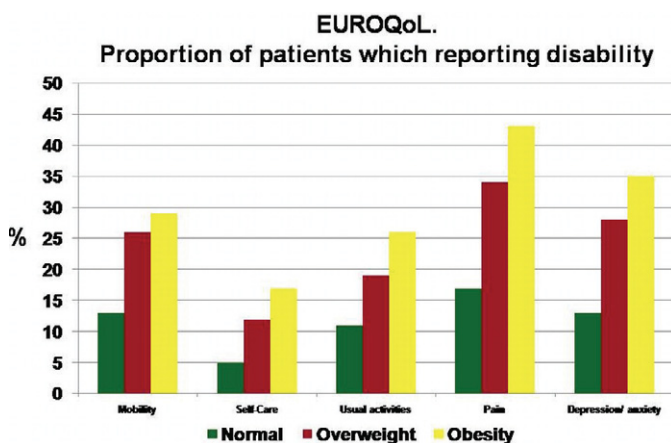
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IMPACT OF "GLOBESITY" IN KNEE OSTEOARTHRITIS

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Purpose: Background. Globesity, a term coined by the WHO to describe the obesity pandemic in the world, has been described as a risk factor for genesis, progression and disability in patients with OA. Objectives. To estimate the punctual prevalence of overweight or obesity in knee Osteoarthritis (OA) patients and to evaluate the impact of obesity on knee function and pain.

Methods: Design cross-sectional study. Consecutive patients who met ACR criteria for OA knee from an outpatient clinic were included. Demographic data and regular dietary habits were evaluated. Anthropometric evaluation according to criteria of ISAK (International Society for the Advancement of Kinanthropometry) was performed. Functional status was evaluated by means of HAQ, WOMAC and EuroQoL. Kellgren and Lawrence (K-L) grading scale was applied to knee radiographic studies in order to evaluate severity of the disease. Descriptive statistics analysis was performed, bivariable



Graphic 1

analysis was done properly using Wilcoxon test, median test, Student t test and Fisher exact test.

Results: 94 patients were included, 88% women, mean age 61.8 vs. male 63.7 years old, mean disease duration from diagnosis was higher in men, 3.6 vs. 2.2 years in women ($p=0.006$). Frequent comorbidities in women were hypertension 40.5%, osteoporosis 29.2% and dyslipidemia 19.1%. Body Mass Index (BMI) was 28.5 in women vs. 27.4 in men. Overweight prevalence was 34.8% in women vs 83% in men; obesity prevalence was 43.8% in women vs. 17% in men. Comparing current weight with healthy weight, women had 13.1 kg over in comparison with men with 9.3 kg. Evaluating waist circumference and using the WHO reference, more than 90% of OA patients had higher risk for developing chronic diseases. Patients with higher radiological score had worse pain in affected knee ($p=0.05$). Those patients with higher BMI had greater pain and stiffness, and lower functionality ($p=0.001$). Patients with overweight and obesity reported worse quality of life (QoL) compared with patients con normal weight (Graphic 1).

Conclusions: Patients with knee OA have a very high prevalence of overweight and/or obesity. These weight disorders have an important influence in pain, function and quality of life.

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COMPARISON OF TWO RESURFACING PROSTHESES FOR TREATMENT OF OSTEOARTHRITIS OF THE SHOULDER. PRELIMINARY RESULTS

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Purpose: Humeral resurfacing arthroplasty is used to preserve bone stock and restore normal anatomy in the osteoarthritic shoulder joint. The aim of this study was to examine the radiological and clinical outcome after Copeland and Global Cap humeral resurface replacement.

Methods: 21 patients (10 females) at a mean age of 64 (39-82) years and with shoulder osteoarthritis were included and randomized to a Copeland (11) or Global Cap (10) prosthesis. Both prostheses were uncemented. At 1, 6, 12 and 24 weeks migration of the prosthesis was measured with use of RSA, conventional radiographs were obtained for a geometrical analysis, and the patients were followed clinically with Constant Shoulder Score (CSS) and Western Ontario Osteoarthritis of the Shoulder Index (WOOS). At 1, 12 and 24 weeks the periprosthetic bone mineral density (BMD) was measured with DEXA.

Results: At 6 months, 13 patients could be evaluated for prostheses migration. The median total translation was 0.09 mm for the Copeland prostheses and 0.33 mm for the Global Cap ($p=0.20$).

16 patients had BMD measured 6 months after surgery. Around the Copeland prostheses, BMD decreased from 0.55 to 0.39 g/cm² ($p=0.02$) and around the Global Cap, BMD changed from 0.46 to 0.36 g/cm² ($p=0.21$).

15 patients completed CSS and WOOS at 6 months. In the group with a Copeland prosthesis, CSS increased from 55 to 68 ($p=0.25$) and WOOS improved from 1019 to 535 ($p=0.03$). For the patients with a Global Cap, CSS improved from 32 to 57 ($p=0.12$) and WOOS improved from 1311 to 477 ($p=0.01$).

LGHO was measured for 15 patients at 6 months. The median difference in LGHO pre- to postoperative for the Copeland was 0.32 (-0.40 - 0.53) cm and the median difference for the Global Cap was -0.17 (-0.37 - 0.22) cm.

Conclusions: Based on these preliminary results, the performance of the 2 prostheses is comparable. Yet, we consider that there is a problem with overstuffing in the Copeland prosthesis.

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TOWARDS TESTING THE HYPOTHESIS THAT THE INITIAL INJURY PATTERN IS AN IMPORTANT DETERMINANT OF POST-TRAUMATIC ARTHRITIS

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Purpose: Present evidence indicates that surgical repairs of ACL tears do not alter subsequent risk for OA, a complication that develops in over half of affected joints within 10 to 15 years. We hypothesize that an important determinant of this outcome is the extent of initial injury. To develop an approach for testing this hypothesis, we have assessed the information captured at the time of the repair in patients treated by a single orthopedic surgeon using a standardized reconstruction technique.

Methods: Data were obtained from information recorded in the medical records of sequential patients who underwent autologous bone-patellar tendon-bone graft ACL reconstruction by one of us (Levy) during the years 2003-2005. Injury to specific articular structures, as well as the effects of age, height, weight, body mass index (BMI), occupation, tobacco and alcohol use, gender, and timing of surgery relevant to the date of injury were assessed.

Results: Eighty-six patients who underwent this procedure for ACL reconstruction were analyzed. Among them, 24 patients had medial meniscal tears (most commonly partial thickness, longitudinal and bucket handle tears in the posterior horns), 15 had lateral meniscal tears (most commonly radial and longitudinal tears in the posterior horns), and 7 had tears in both menisci. Nineteen patients suffered chondral injuries: 3 in the lateral femoral condyle, 8 in the patella, 9 in the medial femoral condyle, and 3 in the trochlea. Obese patients, (defined as a BMI of 30 or over), had an increased risk for patellar chondral lesions (2.3% versus 31.3%). Surgical delay greater than a year was associated with an increased risk for medial meniscal tears (29.7% versus 75%), but not lateral meniscal tears, as well as medial femoral condyle injuries (6.8% versus 33.3%). Patients over the age of 25 were more likely to have medial femoral condyle lesions (2.5% versus 17.4%). Gender, height, weight, occupation, and use of alcohol or tobacco showed no effect on chondral or meniscal injuries in patients with ACL tears.

Conclusion: The observations recorded on this group of patients are very similar to those recorded by other orthopedic surgeons who have attempted to map meniscal and chondral lesions observed at the time of ACL repair procedures (Slauterbeck et al., 2009, Kaeding et al., 2005). The correspondence among these recordings supports their accuracy. Therefore, among patient groups with identical surgical interventions, it seems reasonable to undertake a large-scale study correlating recordings of initial injury patterns with biomarkers of cartilage extracellular matrix turnover, imaging studies of the menisci and cartilage, and clinical features of OA at 5 to 15 years of follow-up as a means of testing the hypothesis.

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GENDER AND BODY MASS INDEX PREDICT WOMAC AND QUALITY OF LIFE SCORES IN KNEE OSTEOARTHRITIS

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Purpose: To examine the association of gender, BMI and age with knee osteoarthritis (OA) symptomatic severity.

Methods: This was a cross-sectional analysis of 1487 patients with symptomatic knee OA. Patients completed the WOMAC questionnaire and SF-36 health survey. Each patient's BMI and age were recorded. BMI and age associations with knee OA symptoms were investigated using correlation calculations and analysis of variance (ANOVA) tests. A t-test was used to analyze gender differences in knee OA symptoms. A generalized linear model (GLM) univariate procedure was performed to analyze the strength of the BMI associations across genders.

Results: BMI correlated significantly with worse knee OA symptoms for all WOMAC and SF-36 parameters (all $P \leq 0.001$). Age correlated significantly with worse symptoms for only WOMAC function and SF-36 physical functioning ($P = 0.001$ & 0.009 , respectively). A significant difference across BMI quintiles was found for all parameters of the WOMAC and SF-36 surveys (all $P \leq 0.01$). Females showed worse knee OA symptoms in all WOMAC and SF-36 parameters (all $P \leq 0.001$). There was a significant interaction of gender by BMI in the WOMAC pain and WOMAC function ($P = 0.01$ and 0.02 , respectively).

Conclusions: The female gender and increased BMI strongly predicted significantly worse symptoms of knee OA as evaluated by all the parameters of the WOMAC questionnaire and SF-36 health survey. The effect of BMI was significantly stronger in females. An increase in age predicted significantly worse knee OA symptoms in only the functional parameters of the WOMAC and SF-36.

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PREVALENCE OF ANXIETY AND DEPRESSION IN PATIENTS WITH OSTEOARTHRITIS IN A PRIMARY CARE-BASED RHEUMATOLOGY CONSULTATION

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Purpose: To analyze the prevalence of the diagnosis of the anxiety-depression syndrome in patients with symptomatic osteoarthritis seen in a rheumatology consultation within a primary care setting.

Methods: Prospective study systematically including patients aged >50 y referred to a rheumatology consultation in a primary care setting because of symptomatic OA or symptoms leading to a diagnosis of OA at that consultation. Demographic data of all patients were recorded as well as the diagnosis of anxiety-depression when present in the primary care diagnosis database system of the patient as registered by his/her GP. Patients within the same age range referred to the same consultation because of soft tissue disorder and who did not have any other rheumatologic disease were used as group control.

Results: Four hundred and twenty-five patients were included, 235 with OA and 190 with soft tissue disorders; mean age 64.7 ± 9.2 y, F/M 317/108 (75/25%). No differences were observed between groups regarding sex distribution or age. The diagnosis of anxiety-depression was significantly more frequent in the OA group compared with the control group (24.3% vs. 15.3%, $p < 0.05$, OR 1.78 (1.08-2.91, IC95%). This difference was present in patients with knee/hip OA (24.7 vs. 15.3%, $p < 0.05$, OR 1.78 (1.08-3.08, IC95%) and with hand OA (25.9 vs. 15.3%, $p < 0.05$, OR 1.94 (1.04-3.62, IC95%).

Conclusions: These data suggest that anxiety-depression disorders are relatively frequent in OA patients referred to a rheumatology consultation in a primary setting.

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PREOPERATIVE STATUS IN PATIENTS UNDERGOING PRIMARY TOTAL HIP ARTHROPLASTY

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Purpose: Osteoarthritis (OA) is the most common reason for total hip arthroplasty (THA). The main indications for THA are severe pain and functional limitations, and should be considered if conservative treatment has failed. Although international recommendations for both conservative therapy and surgical treatment exist, the adaptation of these guidelines varies. The purpose of the present study was to evaluate if the conservative modalities were given the OA patients in the pre-surgery phases and if the inclusion criteria for primary THA surgery were in accordance with existing international guidelines.

Methods: On the day before surgery, 40 patients completed a questionnaire exploring demographic variables like age, sex, BMI, employment, current medication, previous received treatment modalities and expectations from surgery due to physical function. They completed the self-administered questionnaires Hip disability and Osteoarthritis Outcome Score (HOOS) and the COOP/WONCA. The interviewer-administered questionnaire Harris Hip Score (HHS) was completed and the 20 m walk-test and a stair-climbing test were performed.

Results: The mean age was 68 ± 12 years and the mean BMI was 27 ± 4 . 68% of the patients were women, 52.5% were retired and 37.5% were employed. 50% had attended physical therapy, 65% were on medication and 37.5% had been given advice about physical activity by their GP. The HOOS subscales for pain and ADL function were 34 ± 15 and 40 ± 14 , respectively. The mean HHS was 50 ± 15 . 9 patients (22.5%) were under 60 years and had a mean BMI of 29 and 7 of them had a HHS over 60. The COOP/WONCA subscales physical fitness and daily activities had a mean score of 4.4 ± 0.9 and 3.6 ± 0.8 , respectively. Large variations were observed in the performance-tests, 20 m walk-test mean 30 ± 16 sec, and stair-climbing test mean 31 ± 18 sec. An open question on expectations due to physical function showed that most patients undergoing THA expect to be able to perform demanding physical activities like skiing, biking, dancing and mountain-walking after surgery. The association between self-reported physical function and the performance tests were low, indicating that