KR to subsequent change in BMI comparing with persons with knee OA but who did not undergo a KR.

Methods: We studied subjects enrolled in the NIH-funded Multicenter Osteoarthritis Study (MOST), an observational study of persons aged 50 to 79 years with either symptomatic knee OA or at high risk of disease at baseline. Participants were evaluated at baseline, 30 months and 60 months. For this analysis, we identified those persons who had a KR during the first 30 months of the MOST study but who did not have a subsequent contralateral TKR at any time up to 60 months. Subjects with unilateral KR at baseline and no new KR in the second knee were excluded. We also eliminated subjects who were missing BMI information at 30 months or 60 months. We matched cases to controls on age (as 5 year age categories), sex, study center, race, the worst K/L grade at baseline (Kellgren/Lawrence 0–1, 2, >=3; K/L), and the maximum of five Western Ontario McMaster (WOMAC) knee pain questions at baseline (none, mild, moderate, severe/ extreme). We followed these two groups for BMI change from the 30 month to the 60 month visit of MOST. To determine if KR is associated with BMI change we performed multiple linear regression adjusting for physical activity level (measured by Physical Activity Scale for the Elderly; PASE) and pain medication use at baseline.

Results: Seventy-four subjects met the criteria for cases and were matched to controls on a one to one basis. At baseline, in both groups, mean age was 64.2, 13.5% were African American, 90.5% had K/L >=3, 47.3% had maximal WOMAC pain score of “moderate” and 40.5% had maximal score of “severe or extreme”. Baseline BMI in cases was 32.5 (6.0) and in controls was 32.8 (6.1); baseline educational level of “college or above” was 31.1% in cases and 43.2% in controls. Mean change in BMI from 30 to 60 months was -0.22 kg/m² (-1.29, 0.85) in cases and 0.24 kg/m² (-0.73, 1.21) in controls, with a p-value for significance of change of 0.35 after all adjusters were added. Results were similar when the analysis was restricted to participants who were obese at baseline.

Conclusions: Persons with knee OA who had KR subsequently decreased BMI slightly over 30 months while those who did not have KR increased slightly, but the difference was not significant. As the recovery time of KR can be 12 months, subjects post-KR may still be increasing strength and exercise time, and additional BMI changes may happen over a longer period of time. However, our findings at 30 months post-KR contradict earlier reports.

362

FATIGUE IN OSTEOARTHRITIS: THE ROLE OF JOINT COUNT, JOINT PAIN AND SLEEP PROBLEMS

E.M. Badley 1,2, M. Canizares 1,2

1 Univ. of Victoria, Victoria, Canada; 2 Univ. of Toronto, Toronto, ON, Canada

Purpose: Fatigue is beginning to be recognized as an important symptom in osteoarthritis (OA). However, little is known about the determinants of reporting fatigue in this population. In this study we hypothesize that fatigue is related to the number of joints affected (joint count), the intensity of reported pain, and reported sleep problems (Figure below).

Methods: Data from the 2009 Survey on Living with Chronic Diseases in Canada was used for analyses. This is a nationally representative survey of 4,565 Canadians aged >20 years, who reported having been diagnosed with arthritis by a health professional in the 2008 Canadian Community Health Survey, a general health population survey. Respondents with self-reported OA (n=1,750) were used for analyses. The survey collected data on: frequency of fatigue (1=always to 5=never), intensity of fatigue and of joint pain (0=none to 10= as bad as it could be), sleep difficulties (a lot, a little, not at all), sites of joint pain (up to 18 joint sites), other chronic conditions, and personal characteristics (age, sex, education, income obesity). For multivariate analysis the frequency of fatigue was dichotomized as ‘at least sometimes’ vs. ‘rarely or never’. Sequential multivariate log-Poisson regression models, controlling for personal characteristics and comorbidities were fitted to investigate the relationship of joint count, pain intensity, and sleep problems with reporting of fatigue at least sometimes. Sensitivity analysis using multiple linear regression models for intensity of fatigue were also carried out.

Results: Overall 16% of the population reported arthritis and 6% reported OA. Most people with OA reported some level of fatigue (93.8%), and 78% reported fatigue at least sometimes. The mean level of fatigue was 5.6 (95% CI: 5.2-6.0). Women, obese individuals and those having comorbidities were more likely to report fatigue. The average joint count was 5.1 (95% CI: 4.9-5.3). A quarter of respondents reported difficulties with sleep ‘a lot’ and 38.4% ‘a little’. Fatigue was highly associated with joint count (p<0.0001), pain intensity (p<0.0001), and sleep problems (p<0.001). Joint count was in turn associated with pain intensity (p<0.0001), and sleep problems (p<0.001). Pain intensity and sleep problems (p<0.0001) were also highly associated supporting the need to consider the inter-relationships suggested in the figure. The prevalence ratio (PR) for reporting fatigue from a model adjusting only for personal characteristics was 1.09 (95%CI: 1.06-1.13) for an increase of 2 joints affected. When joint pain was added to the model the PR was still significant but decreased by 67% (PR=1.03 (95%CI: 1.01-1.04)) suggesting that the effect of joint count on fatigue was partially mediated by joint pain. Additionally, when both joint pain and sleep problems were considered in the model, joint count was still significant with a total decrease of 78% on its effect on fatigue (PR=1.02 (95%CI:1.00-1.03)), suggesting that both pain and sleep difficulties partially mediate the relationship between joint count and fatigue. Sensitivity analyses with intensity of fatigue gave similar results.

Conclusions: Fatigue was reported by most people with OA. The number of joints affected had a significant impact on reporting fatigue over and above the effect of joint pain and sleep problems. The high mean joint count and the strong relationships between joint count and fatigue, joint pain and sleep problems suggest that more attention should be paid to the polyarticular nature of OA. The findings further point to the importance of paying attention to joint problems in individuals with OA who are experiencing fatigue.