

ORAL PRESENTATIONS

P19. INTERVERTEBRAL DISC DEGENERATION ON MRI IS ASSOCIATED WITH LOW BACK PAIN: A POPULATION-BASED STUDY

Samartzis, Dino¹; *Karppinen, Jaro*²; *Chan, Danny*³; *Luk, Keith*¹; *Cheung, Kenneth*¹

¹*University of Hong Kong, Orthopaedics & Traumatology, Pokfulam, Hong Kong;*

²*University of Oulu, Physical Medicine and Rehabilitation, Oulu, Finland;* ³*University of Hong Kong, Biochemistry, Pokfulam, Hong Kong*

INTRODUCTION: According to previous studies, the presence of disc degeneration based on MRI and its association with low back pain (LBP) remains questionable. However, such studies were not population-based and/or entailed various methodological limitations, and should be interpreted with caution. Therefore, as part of the largest radiographic and clinical population-based study of the lumbar spine, this study addressed the association of disc degeneration as noted on MRI with the presence and severity of LBP.

METHODS: Sagittal T2-weighted MRIs of the lumbar spine were obtained of 2,702 adult Southern Chinese. Radiographic evaluation entailed the presence of disc degeneration based on the Schneiderman et al criteria. An overall degenerative disc disease (DDD) score (range: 0 to 15) was obtained and represented the global severity of disc degeneration. Additional assessment of spine pathology/abnormalities, LBP, visual analog scale (VAS) pain scores, and subject demographics were performed.

RESULTS: There were 1,614 females and 1,088 males (mean age=42 years). Individuals with disc degeneration had a higher prevalence of LBP than individuals without disc degeneration ($p<0.001$). Similarly, VAS pain scores were significantly higher in individuals with disc degeneration ($p<0.001$). DDD scores were also significantly greater in individuals with LBP as opposed to those without LBP ($p<0.001$). Adjusted logistic regression modeling noted a significant increased association ($r^2=0.95$) of disc degeneration severity and LBP (DDD=0 (ref), adjusted OR=1.4 at 1-2 DDD; OR=1.7 at 3-4 DDD; OR=2.0 at 5-6 DDD; OR=3.4 at >7 DDD; $p<0.001$).

CONCLUSION: This large-scale study noted that disc degeneration based on MRI is significantly associated with LBP. The "global severity" of disc degeneration was found to increase the risk of having LBP. These findings support that the study of disc degeneration on MRI is clinically relevant.