Catastrophizing Scale (PCS, 0–52 scale) at the baseline examination in 2016–2017. Bilateral interphalangeal, metacarpophalangeal, first carpometacarpal and the scaphotrapezio-trapezoidal joint were scored for radiographic OA according to the Kellgren-Lawrence (KL) index (sum score: 0–132 scale). Using linear regression analyses, we analysed whether KL sum score, HADS sum score and PCS sum score (independent variables) were associated with AUSCAN pain (dependent variable). Separate models were applied for each independent variable with adjustment for age, sex and body mass index (BMI). Thereafter, all independent variables were included in the same model. Analyses were repeated using NRS hand pain as the dependent variable. Interactions between KL sum score and HADS/PCS were explored.

Results: Patients reported wide range of pain severity with mean (SD) AUSCAN pain of 8.2 (4.0) and mean (SD) NRS hand pain of 3.8 (2.3). Their radiographic severity ranged from minimal to severe with a median (IQR) KL sum score of 28 (15–44). Most patients reported low levels of anxiety, depression and pain catastrophizing with median (IQR) HADS sum score of 6 (3–10) and PCS sum score of 9 (5–15).

The HADS and PCS sum scores were associated with hand pain, both when analysed separately and in the same model together with KL sum score (table 1). Increasing radiographic severity was not associated with hand pain in the age, sex and BMI-adjusted models. When including HADS and PCS in the models, the associations between radiographic severity and pain became stronger for both pain outcomes and statistically significant for AUSCAN pain (table 1).

We found interactions between KL sum score and HADS. In the 61 persons with HADS depression and anxiety subscale scores below 8, the KL sum score was significantly associated with AUSCAN pain (B=0.03, 95% CI: 0.003 to 0.06, p=0.03) and NRS pain (B=0.02, 95% CI: 0.002 to 0.03, p=0.03) (adjusted for age, sex, BMI and PCS), whereas no associations between radiographic severity and pain were found in persons with HAD depression and/or anxiety subscale scores of 8 or more.

Conclusions: Depression, anxiety and pain catastrophizing were associated with pain in hand OA, emphasising that pain in hand OA should be treated in a biopsychosocial framework. Importantly, radiographic severity was associated with pain only in persons with no or low levels of depression and anxiety.

Disclosure of Interest: None declared


A NOVEL METHOD FOR ASSESSING PROXIMAL TIBIOFIBULAR JOINT ON MR IMAGES IN PATIENTS WITH KNEE OSTEOARTHRITIS


1Clinical Research Center, Zhujiang Hospital, Guangzhou, China; 2Menzies Institute for Medical Research, University of Tasmania, Hobart; 3Department of Epidemiology and Preventive Medicine, Monash University, Melbourne; 4School of Engineering and ICT, University of Tasmania, Hobart, Australia

Background: Proximal tibiofibular joint (ProxTibFibJ) is a synovial sliding joint that has been estimated to transmit one-sixth of the leg’s static load. One study has reported that proximal fibular osteotomy could significantly improve the clinical outcomes in patients with medial compartment OA. However, no study has delimited the measurement of ProxTibFibJ morphological parameters (ProxTibFibJ contacting area, load-bearing area, lateral stress-bolstering area and posterior stress-bolstering area) on magnetic resonance imaging (MRI) and investigated their correlations with knee OA structural abnormalities.

Objectives: To validate a pragmatic method to measure the morphological parameters of the ProxTibFibJ and to describe their associations with knee structural abnormalities in patients with knee osteoarthritis (OA).

Methods: A total of 408 participants with knee OA were selected. The morphological status of ProxTibFibJ were measured on coronal and sagittal magnetic resonance images (MRI). We calculated the contacting area of ProxTibFibJ (S), and its projection areas onto the horizontal (load-bearing area, Sr), sagittal (lateral stress-bolstering area, Ss) and coronal plane (posterior stress-bolstering area, Sb), respectively. Knee structural abnormalities including cartilage defects, bone marrow lesions (BMLs) and cartilage volume were evaluated. Clinical construct validity was examined through describing the associations between the morphological parameters of ProxTibFibJ and knee structural abnormalities. The reliabilities were examined by calculating the intra- and inter-observer correlation coefficients.

Results: The average ProxTibFibJ fibular contacting area was 2.4±0.7 cm². The intra- and inter-observer correlation coefficients for all measures were excellent (all >0.90). In cross-sectional analyses, the ProxTibFibJ morphological parameters (S, Sr, Ss and Sb) were significantly associated with radiographic medial JSN (OR 1.72 for S; 2.20 for Sr; 1.65 for Ss), radiographic medial osteophyte (OR 0.51 for Sr) and MRI-assessed knee joint structural abnormalities including cartilage volume (β = –0.07 for Sr; –0.09 for Sr, cartilage defects (OR 1.63 for S; 1.95 for Sr) and BMLs (OR 1.54 for Sr; 1.74 for Ss) at medial tibiofibular compartment. In longitudinal analyses, S (RR 1.45) and Sr (RR 1.55) of ProxTibFibJ were significantly and positively associated with an increase in medial tibial cartilage defects over 2 years, after adjustment for age, gender, height, weight, ROA, tibial plateau bone area and intervention. S (β = –0.07), Ss (β = –0.07) and Sb (β = –0.06) of ProxTibFibJ were significantly and negatively associated with change in medial tibial cartilage volume, after adjustment for above covariates. Sr (RR 1.55) of ProxTibFibJ was positively associated with an increase in medial tibial BML, and Sr (RR 0.35) was negatively associated with an increase in medial femoral BMLs.

Conclusions: This novel method to assess the morphological parameters of ProxTibFibJ using MRI is reproducible, and has clinical construct validity. The longitudinal associations with osteoarthritic changes suggest that higher load-bearing area of ProxTibFibJ is a potential risk factor for medial compartment OA.

Disclosure of Interest: None declared