Conclusions: The results of this small sample study demonstrate that the HA and P groups regarding the WOMAC subsections of pain (2.27 (4.75; -5.03)). The HA group experienced greater reduction in WOMAC scores between the HA and P groups regarding the CoV for StrTM [Mean difference increases observed at 6m. However, there were no significant differences observed at 6m. The HA group experienced greater reduction in WOMAC scores between the HA and P groups regarding the CoV for StrTM [Mean difference increases observed at 6m].

Results: post-treatment, using repeated measures ANCOVA, controlling for baseline outcomes to those three (3m) and six months (6m) for each of StrTM, SSTM, and BSupp. Treatment effects were determined by comparing baseline outcomes to those three (3m) and six months (6m). CoV of the HA group remained relatively unchanged throughout the study, while these same measures of gait variability increased for the P group, with the greatest increases observed at 6m. However, there were no significant differences between the HA and P groups regarding the CoV for StrTM [Mean difference (95%CI)] [0.25 (0.70; -0.20)], SSTM [0.48 (1.35; -0.39)], or BSup [0.87 (6.77; -5.03)]. The HA group experienced greater reduction in WOMAC scores than the P group, however, there were no significant differences between the HA and P groups regarding the CoV for StrTM [Mean difference (95%CI)] [0.25 (0.70; -0.20)], SSTM [0.48 (1.35; -0.39)], or BSup [0.87 (6.77; -5.03)]. The HA group experienced greater reduction in WOMAC scores than the P group, however, there were no significant differences between the HA and P groups regarding the CoV for StrTM [Mean difference (95%CI)] [0.25 (0.70; -0.20)], SSTM [0.48 (1.35; -0.39)], or BSup [0.87 (6.77; -5.03)]. The HA group experienced greater reduction in WOMAC scores than the P group, however, there were no significant differences between the HA and P groups regarding the CoV for StrTM [Mean difference (95%CI)] [0.25 (0.70; -0.20)], SSTM [0.48 (1.35; -0.39)], or BSup [0.87 (6.77; -5.03)]. The HA group experienced greater reduction in WOMAC scores than the P group, however, there were no significant differences between the HA and P groups regarding the CoV for StrTM [Mean difference (95%CI)] [0.25 (0.70; -0.20)], SSTM [0.48 (1.35; -0.39)], or BSup [0.87 (6.77; -5.03)].

Conclusions: The results of this small sample study demonstrate that gait variability in knee OA patients by preventing further increases in gait variability, particularly in StrTM and SSTM variability. Since gait disturbances are important risk factors for falling, these preliminary results provide rationale for further investigation in a larger trial assessing the effect of intra-articular HA on gait variability, and in reducing the risk of falling and mobility decline in the elder knee OA population.

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A COMPARISON OF THE BENEFITS AND LIMITATIONS OF GUIDANCE BY ULTRASOUND FOR INTRA-ARTICULAR HYALURONIC ACID INJECTIONS FOR OSTEOARTHRITIS OF THE KNEE BETWEEN THE LATERAL AND MEDIAL PATELLAR APPROACHES

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Purpose: Although guidance for injections conducted by real-time fluoroscopic imaging is useful to increase the accuracy rates of intra-articular (IA) hyaluronic acid (HA) injections for osteoarthritis (OA) of the knee, this imaging implies a certain dosage of radiation to the patient. Qvistgaard et al (Osteoarthritis Cartilage. 2001) and Im et al (J Ultrasound Med. 2009) reported the feasibility of guidance using ultrasound (US) for IA injections in the knee through lateral and medial patellar approaches, respectively (Figure 1). This study was designed to compare the accuracy rates and visual analogue scale (VAS) for the highest subjective severe pain during an injection by a orthopaedic surgeon who was beginner in the use of US between the two approaches reported by Qvistgaard et al (Q) and Im et al (I).

Figure 1

Methods: Eighty patients diagnosed with 'dry' knee OA with no clinically detectable effusion received HA injections through the Q and I approaches. A volume of 0.5–1 ml of atmospheric air was injected with simultaneous recording of US signals on the B and M modes. Once IA positioning of the needle was considered adequate, HA was injected and lateral radiographs were taken 10 minutes later. Successful injections were confirmed by a sharply defined shadow of air on the radiograph. A research nurse who was blind to the objectives of the study assessed the participants to the VAS for during injection, after each injection.

Results: The accuracy rates through I approach (78 out of 80, 97.5%) were significantly higher than those through Q approach (70 out of 80, 87.5%), (P=0.032). However, the VAS during injection through the Q approach (31.8±21.1) was significantly lower those through the I approach (39.1±20.2%), (P=0.028).

Conclusions: In the Q approach, the straight surface of the US probe was not fit to the arc surface of thigh and the direction of the needle at the insert site was unclear, so the accuracy rates were lower, compared with those of the I approach. In the I approach, the needle punctured through retinaculum tissue to reach the IA space and thus the VAS during the injection was higher, compared with those of the Q approach.