

perature vs. sFlt01, suggesting a sustained release formulation is possible without fragmentation.

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ACCURACY OF INTRA-ARTICULAR INJECTIONS IN THE KNEE: A SYSTEMATIC REVIEW

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Purpose: Intra-articular injections in the knee joint are commonly used for therapeutic and diagnostic goals concerning knee pathology. Several approaches are used to establish an intra-articular injection in the knee joint, however accuracy rates differ per approach. The primary objective was to summarize the evidence concerning the accuracy of different approaches for intra-articular injections in the knee.

Methods: The literature was systematically reviewed in online databases Pubmed and Embase until June 2009. Two reviewers (JH, MR) independently applied the inclusion and exclusion criteria and inclusion was reached by consensus. Risk of bias of the included studies was assessed independently by 2 reviewers using the QUADAS-tool. Study characteristics, accuracy data, other outcome measures, results and conclusions were independently extracted by 2 reviewers. A trained statistician pooled the accuracy rates per used injection approach.

Results: In total, 9 studies were included. The superolateral approach with the knee in extension was studied most (230 injections) and resulted in the highest pooled accuracy of 89% (95% C.I. 85%-93%). Pooling of the medial midpatellar approach, the anterolateral approach and the anteromedial approach resulted in the lowest pooled accuracy rates, respectively in 56% (95% C.I. 46%-68%), 70% (95% C.I. 64%-77%) and 71% (95% C.I. 65%-78%).

Conclusion: Based on the results of this systematic review the authors recommend the superolateral approach with the knee in extension for the intra-articular injection of the knee joint.

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CLINICAL RESULTS OF OPEN WEDGE HIGH TIBIAL OSTEOTOMY FOR OSTEOARTHRITIS AND OSTEONECROSIS OF THE KNEE

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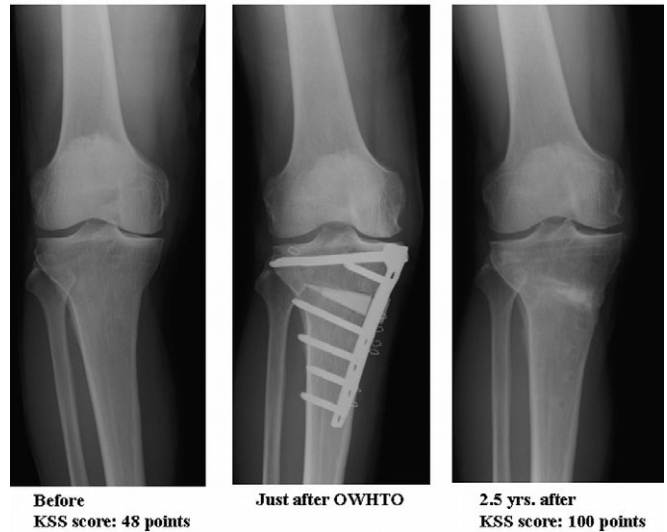
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Purpose: We performed clinical and radiographic evaluation of patients with medial compartmental osteoarthritis and spontaneous osteonecrosis of the knee who had undergone treatment with opening-wedge high tibial osteotomy (OWHTO) followed by early full weight bearing. OWHTO procedure were performed using TomoFix™ and bone substitute materials.

Methods: OWHTO was performed in 93 knees of 77 patients of an average age of 68 years (range 52-82) at the time of the operation. Sixty-three knees from 47 patients were diagnosed as primary osteoarthritis (OA) and a further 30 patients were diagnosed as spontaneous osteonecrosis (ON). We established an early weight bearing program during which these patients were permitted partial weight bearing exercise one week after their osteotomy. Patients who performed OWHTO for one side started full weight bearing walk at two weeks, and patients simultaneous bilateral cases (11 patients) started full weight bearing at three weeks post-surgery. The average follow-up period was 49 months (range 24 to 83 months). Clinical examinations of the knee joints in our patient cohort consisted of both subjective and objective parameters that were recorded and documented using the American Knee Society Knee Score (KSS) and Function Score. These evaluations were carried out presurgically and at the time of follow-up. Additional clinical findings that were assessed included range of motion, Japanese-style sitting, and possible post-surgical complications. Radiological evaluations were carried out on the femoro-tibial angle (FTA), using an AP weight bearing radiograph of a single leg, with the knee joint in extension. A weight bearing line (WBL) ratio was calculated using standing long-cassette radiographs of the lower extremities.

Results: Functional assays, including the American Knee Society Score and Function Score, showed significant improvement from 49±11 to 91±7.7 points, and 62±13 to 95±8.2 points, respectively. Prior to surgery, the average femoro-tibial angle during standing was 181±2.5° (1° anatomical varus) but measured 169±2.2° (11° valgus) at the time of follow-up. There

68 yrs. old woman, osteoarthritis of the rt. knee



were no instances of non-union or implant failure in any of our patient subjects. Furthermore, 54 of the patients in our study group (70%) could sit comfortably in the Japanese style after surgery. Their average FTA was 181.3±2.4° (11° varus) and average WBL ratio was 17.2±16.5%, indicating that the WBL had shifted toward the medial compartment. After surgery, the FTA improved to 169.6±2.3° (10° valgus) and the WBL ratio shifted to 62.9±12.5%, indicating that the WBL had moved toward the lateral compartment of the knee.

Conclusions: We demonstrate that an early weight bearing exercise program enables full weight bearing at two weeks after OWHTO with TomoFix and artificial bone wedges. Overall, this combination was a highly successful course of treatment for correcting knee malalignment in patients with medial compartmental OA and ON of the knee.

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EFFICACY AND SAFETY OF THREE INTRA-ARTICULAR INJECTIONS WITH JOINTEX MINI FOR THE TREATMENT OF SYMPTOMATIC CARPO-METACARPAL JOINT OSTEOARTHRITIS

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Purpose: To investigate the efficacy and safety of a three intra-articular injection course with Jointex Mini (Hyaluronic Acid 8mg/1ml, Chiesi Farmaceutici S.p.A., Parma, Italy) for the treatment of symptomatic OA of the CMC.

Methods: Forty-eight female patients affected by symptomatic CMC OA (age 51-90 years; 67±9 years, mean ± SD) were treated with three once-weekly intra-articular injections of Jointex Mini. All subjects met ACR criteria for hand OA and had CMC OA grade 1-4 according to Kellgren and Lawrence on standard X-ray performed within 6 months before the inclusion. Twelve patients showed bilateral OA so that globally 60 CMC joints were treated. Patients were followed for a 3-month period after the last injection. Treatment efficacy was assessed through visual analogue scale (VAS) pain quantification (baseline; 2nd and 3rd injection; one and three months after the last injection). Side effects were recorded.

Results: VAS was significantly reduced after the first injection (2nd injection vs baseline, p<0.005; 3rd injection vs baseline, p<0.0001; 3rd injection vs 2nd injection, p<0.05) and reached the lowest score one month after the last injection. The efficacy was maintained for all the 3-month follow-up period (one month vs baseline, p<0.0001; three months vs baseline, p<0.0001; - one month vs 3rd injection, p=n.s.; three months vs 3rd injection, p=n.s.). Only minor side effects were observed (mild pain and/or ecchymosis in injection site).

Conclusions: Our study supports viscosupplementation with Jointex Mini as a safe and efficacious approach for symptomatic CMC OA. Our schedule based on three weekly intra-articular injections supplies pain relief lasting as long as 3 months with negligible side-effects.