

Knee Osteoarthritis. Hyaluronan treatment, pain modalities and Magnetic Resonance Imaging

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ABSTRACT

This PhD dissertation is based on three studies concerning osteoarthritis (OA) in the knee carried out at Department of Rheumatology, Aarhus University Hospital.

The aim of the first study was to examine the longterm efficacy and safety of five intraarticular injections of Hyalgan® compared to saline in a oneyear multicentre double-blinded placebo controlled study with 337 patients having knee OA. From our centre we participated with 103 patients. The study showed no difference between Hyalgan® and saline neither on pain nor function, which are in accordance with recent metaanalyses. Whether a specific subgroup of OA patients could benefit from hyaluronan treatment remains unclear and needs further investigation.

Secondly for the 103 patients included at our centre the aim was to compare the conventional and subjective methods of pain measurements in knee OA with new and semiobjective measurements of pain detection threshold and stimulus-response pain reaction assessed by pressure algometry. Further to examine dynamic and isometric muscle strength and correlate these findings with the conventional parameters for pain and function. The results indicated that pain on walking 50 meters scored on a visual analogue scale could give as much information about the knee OA pain as more time consuming algofunctional tests as WOMAC and Lequesne indexes. Muscle strength did not change over time. Pressure algometry results indicated that the nociceptive system was not changed by OA over time and sensibility changes occurred locally in the joint. However, pressure algometry did not show advantages compared to conventional pain measurements that allows recommendations in daily clinical practice.

The aim of the third study was in knee OA to compare MRI cartilage reduction, bone marrow lesions (BML) and synovitis with pain muscle strength and radiographic variables. Ninety of the 103 patients were examined. High prevalences were found for all three parameters. No significant changes over the one-year period were found for cartilage. BML fluctuated with no clear trend. Synovitis remained unchanged for most patients and when changes occurred it was mostly exacerbation. No correlations between MRI parameters and clinical parameters were found. Changes in bone marrow lesions correlated with progression of cartilage loss. Whether this is clinical relevant needs further examinations.