DYNAMIC CONTRAST ENHANCED MR IMAGING IN EARLY STAGE KNEE OSTEOARTHRITIS: A TEST-RETEST REPEATABILITY STUDY IN HEALTHY AND MODERATELY DISEASED SUBJECTS


Objectives: 1. Compare DCE-MRI parameters between participants with mild/moderate OA and aged matched controls.
2. Enable effect and sample size calculations for further studies.

Methods: 9 knee OA patients and 4 controls underwent two MRI scans with a month separation. All patients had diagnosis of knee OA as per ACR criteria, with medial compartment predominant disease and Kellgren-Lawrence grade 2/3 on MRI. All patients had diagnosis of knee OA as per ACR criteria, with medial compartment predominant disease and Kellgren-Lawrence grade 2/3 on MRI.

Results: Median age of knee OA patients (controls) were 52±5.2 (55±3.0) years. BMI (mean±SD) of patients (controls) were 28±4.1 (25±3.5) kg/m². KL grade 2 (3) was observed in 3 patients (3 controls), KL grade 3 was observed in 5 patients (1 control). The percentage of patients with synovitis grade 0/1/2 at baseline were 3 (3), 5 (4) and 7 (5), respectively. The percentage of patients with synovitis grade 0/1/2 at follow-up were 5 (4), 5 (3), and 7 (4), respectively.

Conclusions: Higher Ktrans and IAUCinf in patients indicates the potential of revealing microvascular function differences. The fact that this is not observed in all patients could suggest phenotypical variation. High CoVs in patients relative to healthy may be explained in part by fluctuation in disease status. Manual delineation also contributes to this variation. DCE-MRI measures of vascular disruption associated with synovitis in knee OA are practical and feasible for imaging trials. These measures offer greater insight and sensitivity into the inflammatory component of OA that is not captured using other radiological methods.

REFERENCES:

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WHAT IMAGING DETECTED PATHOLOGIES ARE ASSOCIATED WITH SHOULDER SYMPTOMS AND THEIR PERSISTENCE? A SYSTEMATIC LITERATURE REVIEW

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Background: Shoulder pain is a very common musculoskeletal complaint and a significant contributor to disability and morbidity. Recovery can be slow and over 50% continue to have pain at 18 months. Shoulder pain has a significant negative impact on quality of life and poses a significant economic burden, with costs estimated to be £ 345 million per year in the UK alone. Modern imaging modalities can accurately detect soft-tissue pathologies and are increasingly used, but the relationship of imaging findings to patient symptoms remain unclear.

Objectives: Our aim was to systematically review the literature to determine what imaging features are associated with symptoms and their progression.

Methods: A systematic review using Medline, EMBASE, Cochrane and grey literature was conducted to April 2017. The cross-sectional and longitudinal relationships between imaging-detected abnormalities and symptoms were analysed and associations qualitatively characterised by a best evidence synthesis based on study design, covariate adjustment and the Grade of Recommendations.