Conclusions: Since the differential diagnosis between PsA and EoA is difficult, the results of this pilot study support the idea, that high resolution MR Imaging may be a provide additional diagnostic tool to differentiate these two ethnitities. Further studies are needed to address this imaging characteristics.

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DETAILED DIGITAL ANALYSES OF HIP AND KNEE RADIOGRAPHS IN AN EARLY OSTEOARTHRITIS COHORT (CHECK) PROVIDE INDIVIDUAL JOINT CHARACTERISTICS INDEPENDENT OF DISEASE

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Purpose: To evaluate whether accurately measured radiographic features by digital analyses 1) are related to severity of osteoarthrit- is (OA) and 2) represent joint characteristics of an individual.

Methods: In CHECK (Cohort Hip & Cohort Knee) 1002 participants with early complaints related to OA were included for evaluation of clinical and radiographic features of OA during 10 years of follow-up. At baseline mean age of participants (79% female) was 56 (±5) years and 45% of participants suffered from hip and knee pain, 36% of knee pain only, and 18% of hip pain only, with a median VAS of 3 (2-5). Baseline standardised radiographs (AP pelvis and PA semiflexed) were analysed with digital image analysis using Holly’s software [19/20] and Knee Images Digital Analysis (KIDA) providing continuous measures of minimum JSW and mean JSW of hip radiographs and minimum and mean JSW, total osteophyte area and mean bone density (BD) of knee radiographs. Both methods have shown to measure characteristics of OA in established OA. At baseline 93% of participants had no/doubtful OA in hips or knees (Kellgren & Lawrence grade (KLG) 0&I) and only 7% had minimal/moderate OA (KLG II&III). Digital analysis was compared with conventional KLG to study validity of measuring individual joint characteristics. Importantly, it was evaluated whether separate outcomes represented joint characteristics of an individual and/or were related to OA. In this case, radiographic OA will affect an individual’s normal anatomy resulting in lower correlation between joints. Comparisons were made between contralateral (left vs. right hip and left vs. right knee), ipsilateral (e.g. left hip vs. left knee) and diagonal joints (e.g. left hip vs. right knee) for all participants and for subgroups of participants without (KLG 0&I) and with (KLG II&III) radiographic OA. Pearson correlation coefficients were determined for comparison of digital analyses with KLG and for comparison between joints within participants.

Results: 1) In these participants with early complaints related to OA, significant correlations were found between the conventional KLG and separate features as measured by digital image analyses: R=-0.36 for minimum JSW and R=-0.24 for mean JSW of the hip (both p<0.001). For the knee correlations found were R=-0.19, -0.19, 0.36 and 0.10 for minimum and mean JSW, osteophyte area and BD respectively, all p<0.001. Irrespectively, within one KLG a large variation was found for outcome measures of the digital analyses. 2) Overall significant correlations between individual radiographic features of different joints (contralateral, ipsilateral and diagonal) within participants were found. Strong correlations were found in the subgroup with KLG 0&I, especially between contralateral joints: correlations for minimum and mean JSW of hips, and minimum JSW, mean JSW, osteophyte area and BD of knees were R=0.72, 0.81, 0.70, 0.71, 0.56, and 0.89 (all p<0.001) respectively. Importantly, in the subgroup with radiographic OA (KLG II&III) most correlations disappeared, suggesting a disruption of