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Imaging biomarkers in MSK MRI

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Imaging is important for the diagnosis and assessment of osteoarthritis (OA) of knee and of spinal cord injury (SCI).
For knee OA, MRI-based semi-quantitative scoring systems such as WORMS (the Whole Organ Magnetic Resonance Imaging Scores), MOAKS (MRI Osteoarthritis Knee Score) are using mainly at research fields, and quantitative medial femoral cartilage volume or thickness measurements are rising as one of the OA imaging biomarkers. Quantitative T1rho, T2 mapping, dGEMRIC (delayed Gadolinium enhanced MRI of cartilage) and so on are using for the cartilage compositional MRI of knee OA in the clinical and research fields.
For traumatic or non-traumatic spinal cord injury, conventional MRI has the fundamental role in the diagnosis and evaluation of levels, degree, causes, and associated injuries. Quantitative MRI, such as magnetization transfer, T1 or T2 mapping, diffusion-weighted imaging, diffusion tensor imaging may reveal the microstructural changes along the neural axis. Both conventional and quantitative MRI for SCI might be predictive of clinical outcome.
In this session, several MR imaging biomarkers of knee OA and spinal cord injury will be reviewed.

Keywords: Knee osteoarthritis, Spinal cord injury, imaging biomarker, MRI