

#ECR2020 - The Future of MRI



In a very interesting session at #ECR2020 Digital Congress this week, four key speakers, Olivier Clément of France, Siegfried Trattnig of Austria, Silvio Aime of Italy and Vikas Gulani of the U.S. talked about some of the most promising emerging areas in MRI.

MRI is an essential modality in the clinical setting. Abdominal imaging, brain imaging, cardiac imaging and musculoskeletal imaging are all critical in everyday clinical practice. That is why MRI equipment is constantly improving and has played an important role in the early diagnosis of musculoskeletal and central nervous system disorders.

During the session, the speakers reviewed the latest advances in MR and envisioned the future of MRI. Today, MRI is being used to evaluate normal and diseased tissue, and novel techniques such as hyperpolarisation and fingerprinting are finding their way into clinical practice.

Siegfried Trattnig, a professor of radiology at Vienna Medical University, Austria, summed up the latest developments in MRI. He talked about the signal-to-noise ratio and pointed out that the higher the signal, the more one can play around with different applications in MR, and the more benefit can be derived from it. A high spatial resolution provides more details in morphological MRI imaging and can improve diagnostic accuracy and confidence, he explained.

Olivier Clément, a professor of radiology at the Hôpital Européen Georges-Pompidou, Paris Descartes University, France, discussed the risks of gadolinium-based contrast agents. She points out that it has always been assumed that gadolinium is safe but gadolinium deposition in the brain has been revealed in studies, and this has raised doubts about its safety. That is why linear gadolinium-based contrast products were completely withdrawn in 2018. Now, the application of macrocyclic gadolinium-based contrast agents is also being debated because its accumulation in the brain of patients still remains unclear and requires further investigation. Prof. Clément emphasised that there is a need to think twice before we inject patients and that there is a need to completely rethink the use of gadolinium.

Silvio Aime of Italy talked about novel methods to generate MRI contrast such as CEST and hyperpolarisation and their potential clinical application in the future.

Vikas Gulani talked about quantitative MRI and the principles underlying magnetic resonance fingerprinting (MRF). He discussed the role of MRF in healthcare.

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