

Special Issue

Diffusion-Weighted Magnetic Resonance Imaging (DWI): Clinical Potential and Applications

Message from the Guest Editor

Diffusion-weighted magnetic resonance imaging (DWI) is a non-invasive method sensitive to local water motion in the tissue. DWI signal can be interpreted using a variety of models, which attempt to capture not only simple diffusion effects, but also perfusion and anisotropy. As a tool to probe the microstructure, including the presence and potentially the degree of fibrosis, DWI has the potential to become an effective imaging biomarker. Since its introduction in the 1980s, DWI has been increasingly used, first in the brain, then in oncology and, in the recent years, also to investigate whole-body pathophysiology, including but not limited to the kidney, liver, pancreas, and prostate. Moreover, thanks to its non-invasiveness, DWI has been widely adopted in the pediatric population. The present Special Issue aims to highlight DWI's clinical potential and provide an overview of possible applications in different clinical contexts, raising awareness among clinicians of a promising non-invasive functional MRI tool that, after long being used for research, is now ready to enter the clinics.

Guest Editor

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