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Implementation & Development of Guidelines for Using DTI in Routine Clinical Practise: A Radiologist's Perspective

EDUCATIONAL OBJECTIVES

- Describe the role of diffusion-weighted imaging, diffusion tensor imaging and fiber tractography in adult brain and spine lesions
- Evaluate the current literature and state of evidence of current and new methods available clinical and in the research settings for these techniques
- Assess the current and potential future role of these techniques in the brain and spine and some novel methods on the horizon such as high resolution diffusion spectral imaging and Q-ball imaging

PRESENTATION SUMMARY:

The characterization of the CNS disease forms the bread and butter of daily neuroradiology practice. The application of diffusion-weighted imaging, diffusion tensor imaging and fiber tractography techniques is becoming increasingly important in increasing our sensitivity, specificity and diagnostic confidence. Diffusion has been the mainstay for the diagnosis and triage of acute ischemic stroke but both diffusion-weighted and diffusion tensor imaging and diffusion tractography have gained favor in many other applications beyond stroke and tumor. Applying echo planar diffusion techniques to the spinal cord has inherent challenges because of its small size and surrounding structures. We demonstrate some of the emerging applications and review the challenges, need for standardization and automation before it can be widely implemented in the clinic

REFERENCES:

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3. Law M: State of the Art Diagnostics, Imaging and Therapeutics. Neuroimaging Clinics of North America August 2010