



MD-PhD Cross Talks

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Sodium MRI 의 임상적 활용

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Sodium (^{23}Na) MRI provides unique physiological insights beyond conventional proton imaging by enabling in vivo assessment of tissue sodium concentration, which reflects cellular viability, membrane integrity, and ionic homeostasis. Despite technical challenges such as low signal-to-noise ratio and short $T2^*$ relaxation, advances in ultrashort echo time (UTE) sequences and multinuclear hardware have made clinical sodium imaging increasingly feasible. This lecture will introduce the principles of sodium MRI, discuss optimized acquisition techniques including 3D-UTE-FLORET, and present recent applications in neuroimaging—particularly in brain tumors. Potential clinical utilities and limitations will also be addressed.

Keywords: *Sodium MRI, Multinuclear MR, Neuroimaging, Brain tumor*