

## عنوان مقاله:

Recent Advances and Future Directions in Imaging of Peripheral Nervous System: A Comprehensive Review for Therapeutics Approach

## محل انتشار:

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## خلاصه مقاله:

PNS (Peripheral nervous system) disease comprises a wide range of manifestations from acruable damage to nerve body degeneration. Finding proper imaging sequences of MRI (Magnetic Resonance Imaging) to maximize the detection sensitivity and specificity of PNS injuries, is the purpose for which this study was conducted. In this regard, due to Wallerian degeneration, axonal degeneration and inflammation after nerve injury, were mentioned as the inseparable factors of nerve damage, and clues to be detected by the MRI. Gadofluorine M and USPIO nanoparticles are candidates which provide contrast in multiple aspects, such as diagnostic approaches and drug tracking. For instance, the P<sub>904</sub> USPIO particle is proper for long-term monitoring, while the CS<sub>015</sub> (PAA-coated USPIO), USPIO-PEG-tLyP-1, and USPIO nanovesicles are appropriate for drug delivery. Besides contrast agents, the implication of gradient echo or 3D DW-PSIF provides more precious data over conventional sequences, including T<sub>2</sub>-weighed on the physiological or pathological PNS status. Eventually, although the real-time imaging and simplified procedure of the ultrasound technique have advantages over MRI, the low-resolution disvalues its benefits. Alternatively, there is a growing trend in the application of Diffusion-weighted imaging (DWI) to acquire a clear concept of disease .diagnosis, along with Diffusion tensor imaging (DTI) to successfully monitor the rate of nerve regeneration that is applicable for therapeutic approaches

## کلمات کلیدی:

PNS, MRI, Ultrasound, Nanoparticle, Nerve Regeneration

