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The role of nano-contrast agents in Medical Imaging

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As newer technologies in the field of medical imaging continue to expand, development of unique techniques for optimizing image quality becomes very necessary to improve diagnosis of pathologies and patient safety. Different types of medical imaging devices and contrast agents have been developed for specific diagnostic purposes. Current challenges remain for fast and detailed imaging of tissue microstructures and lesion characterization that could be achieved via development of nontoxic contrast agents with longer circulation time.Nanoparticle technology offers this possibility. Here, I review nanoparticle-based contrast agents employed in most common biomedical imaging modalities, including MRI and CT addressing their structure related features, advantages and limitations. Furthermore, their applications in each imaging modality are also reviewed using commonly studied examples

Biography

Sadegh Dehghani has completed his PhD at the age of 34 years on Medical physics from Tehran University of Medical Sciences. He is a faculty member of Tehran University of Medical Sciences. He has published hot topic papers in reputed journals in the field of nano-contrast agents and has been working with MRI and CT devices. The image quality optimization by using nano-contrast agents is one of his interests