

Nuclear medicine application and innovation in neuroimaging

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ABSTRACT

The field of nuclear medicine has undergone transformative advancements in recent years, particularly in the realm of neuroimaging. Scintigraphy techniques such as single photon emission computed tomography (SPECT) and positron emission tomography (PET) provide qualitative and quantitative measurement of brain activity in both physiological and pathological states. This lecture delves into the cutting-edge technologies in nuclear medicine for the application of neurological studies. Emphasis will be placed on recent development in radiopharmaceutical, highlighting novel tracers designed for specific neuroreceptor imaging and molecular targeting. These innovations not only enhance diagnostic accuracy but also pave the way for personalized therapeutic interventions, marking a paradigm shift in the approach to neurological disorders. Furthermore, the integration of artificial intelligence (AI) in nuclear medicine for image analysis and interpretation will also be explored. This transformative synergy between nuclear medicine and AI promises to streamline diagnostics, improve quantitative assessments, and revolutionize the precision of treatment planning in neuroimaging.