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CURRENT TRENDS AND EMERGING DIAGNOSTIC IMAGING

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Editorial

This special issue of Pharmacology Online focuses on the role of diagnostic and molecular imaging in the era of precision medicine. Recent growth in the field of diagnostic radiology has dramatically increased the complexity of this field. Diagnostic imaging has become widely available and plays an increasing role in clinical diagnosis and therapy.

The last two decades have seen an unprecedented increase in molecularly targeted agents available for clinical use, with many others under clinical development. The importance of these molecular targets for treatment opens up a range of opportunities for molecular and hybrid imaging, as these techniques are the current gold standard for non-invasive molecular imaging in humans.

The acquisition of advanced technology is often based on consumer demand rather than real clinical need. New techniques of imaging — if they are to use resources from available services — should be introduced to clinical practice only either in the framework of clinical studies or after critical and objective assessment has shown clinical benefits to be superior to previous practice.

In this Special Issue, radiologists and nuclear medicine specialists give an expert overview of some hot issues in brain imaging, liver damage, prostate cancer, neuroendocrine tumors, breast cancer, musculoskeletal imaging, theranostics based on somatostatin analogues radiolabeled with β-emitters radionuclides, and so on, from definition and classification to molecular imaging, hybrid imaging, to diagnosis.

This collection covers some important new topics, but also shows how management has evolved and different approaches have been introduced in patients with this complex and heterogenous disease.

The last topic focused on in this special edition is radiomics. Large amounts of quantitative features extracted from medical imaging, have the potential to serve as non-invasive biomarkers for tumor characterization, prognostic stratification and response prediction, thereby contributing to precision oncology.

We wish you a pleasant reading!

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