Contrast Media & Molecular Imaging

Special Issue on
Frontiers from Radiomics in Molecular Imaging

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CALL FOR PAPERS

The area of cancer research is nowadays rapidly evolving with basic research deepening on the understanding of molecular mechanisms underlying carcinogenesis and cancer cells spreading. Evidences showed that human cancers frequently display intratumor phenotypic heterogeneity whose nature can have profound implications for both tumor development and therapeutic outcomes. Genotypic and phenotypic profiles have shown increasing diagnostic and prognostic accuracy of *ex vivo* biopsy studies in several cancer diseases.

Recently, *in vivo* molecular imaging, such as Computerized Tomography (CT), Magnetic Resonance (MR), functional diffusion-weighted imaging (DWI) MR, and Positron Emission Tomography (PET) are showing intriguing results in characterizing lesions, predicting prognosis and therapy response in many cancer diseases, in particular when quantitative indexes of tumor are used, such as tumor functional volume, apparent diffusion coefficient, standardized uptake value, or other derived indexes. However, limited and contradictory results have been reported and many authors argued that such macroscopic features are not able to properly reflect the intratumor heterogeneity responsible for the different progression or therapy response. Radiomics refers to mathematical methods used to extract a high number of descriptors from *in vivo* medical images of cancer. The basis hypothesis is that such descriptors are able to capture the heterogeneity of cell underlying the cancer genotype and phenotype.

We invite authors to contribute original research articles as well as review articles that will illustrate and stimulate the increasing effort to understand the heterogeneity of cancer phenotype and to exploit the use of radiomics in targeted molecular imaging studies for the identification of diagnostic/predictive biomarkers of cancer.

Potential topics include but are not limited to the following:

- Radiomics studies in preclinical and clinical settings
- Assessment and interpretation of radiomics features
- Methods for validation of radiomics features
- Image quantification methods for radiomics

Authors can submit their manuscripts through the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/cmmi/frmi/.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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