Machine Learning-based Analysis of Rectal Cancer MRI ...

https://pubmed.ncbi.nlm.nih.gov/30711405

Rationale and objectives: To use **machine learning**-based magnetic resonance imaging **radiomics** to predict metachronous liver metastases (MLM) in patients with **rectal cancer**. Materials and methods: This study retrospectively analyzed 108 patients with **rectal cancer** (54 in MLM group and 54 in nonmetastases group). Feature selection were performed in the radiomic feature sets extracted from ...

Cited by: 9   Author: Meng Liang, Zhengting Cai, Hongmei Zh...
Publish Year: 2019

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https://www.sciencedirect.com/science/article/pii/S1076633219300121

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Mar 01, 2021 · **Radiomics** literature in CRC is highly heterogeneous, but it nonetheless holds promise for the prediction of outcome. The most evidence is available for MRI-based **radiomics in rectal cancer**. **Future radiomics** research in CRC should focus on independent validation of existing models rather than on developing new models.

Author: Femke C.R. Staal, Denise J. van der Reij...   **Publish Year:** 2021

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Radiomics and machine learning applications in rectal cancer: current update and future perspectives

Stanzione A *et al*. Artificial intelligence in rectal imaging

Arnaldo Stanzione, Francesco Verde, Valeria Romeo, Francesca Boccadifuoco, Pier Paolo Mainenti, Simone Maurea

Abstract
The high incidence of rectal cancer in both genders makes it one among the most common tumors with significant morbidity and mortality rates. To define the best treatment option and optimize patient outcome, several rectal cancer biological variables must be evaluated. Currently, medical imaging plays a crucial role in the characterization of this disease, which often requires a multimodal approach. Indeed, magnetic resonance imaging is the first-choice imaging modality for local staging and re-staging and can be used to detect high-risk prognostic factors. On the other hand, computed tomography is widely adopted for distant metastases detection. However, conventional imaging has recognized limitations and many rectal cancer characteristics remain assessable only after surgery by histopathology evaluation. There is a growing interest in artificial intelligence applications in medicine, and imaging is by no means an exception. The introduction of radiomics, which allows the extraction of quantitative features reflecting tumor heterogeneity thus

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Frontiers | Radiomics and Machine Learning for ...
https://www.frontiersin.org/articles/10.3389/fonc.2019.00174 ▾

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Machine Learning (ML) has promising applications in radiation oncology. This technique can process a high number of heterogeneous parameters and its recent development has **led to a new paradigm in predictive medicine with hope for improved prognosis classification and toxicity prediction for a better treatment strategy.** ML algorithms are all the more powerful that they include data from many different sources that can b...

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Cited by: 36　　Author: Paul Giraud, Philippe Giraud, Anne Gasni...
Publish Year: 2019

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