

Thoracic DCE-MRI for Estimating Pharmacokinetic Parameters Using Diffusible Tracer

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Purpose

Tumor angiogenesis is one of the most important biomarkers of cancer. It can be visualized with dynamic contrast-enhanced MR imaging (DCE-MRI) with pharmacokinetic parameters using diffusible tracer. The purpose is to demonstrate how to estimate pharmacokinetic parameters from DCE-MRI, and demonstrate usefulness of pharmacokinetic parameters for thoracic DCE-MRI.

Outline of Content

Part 1. Introduction

- 1) What is DCE-MRI ?
- 2) Brief history of DCE-MRI for tumor angiogenesis

Part 2. Quantitative DCE-MRI

- 1) Essential sequences for DCE-MRI in lung
- 2) T1 mapping method
- 3) Method for analysis of DCE-MRI
 - Semi-quantitative DEC-MRI: time curve method
 - Quantitative DCE-MRI: pharmacokinetic modeling method

Part 3. Application of DCE-MRI in Lung

- 1) DCE-MRI in patients with benign tumor
- 2) DCE-MRI in patients with malignant tumor

Summary

Pharmacokinetic parameters can be successfully estimated from DCE-MRI in patients with non-small cell lung cancer. These parameters are quantitative biomarkers for tumor angiogenesis and may be used as prognostic factors of NSCLC or as indicators of target agent treatment.