

主な研究課題・発表代表論文

放射線腫瘍学講座 Radiation Oncology

研究領域 構造解析病態医学

教授 田中 秀和 Hidekazu Tanaka

Web ページ : <http://ds.cc.yamaguchi-u.ac.jp/~radonc/>

主な研究課題

- ・ 動体追跡システムを用いた高精度放射線照射技術の開発
- ・ 新規イメージングと画像誘導放射線治療法の開発
- ・ 放射線治療における新規バイオマーカーの開発
- ・ 人工知能を用いた放射線治療の高度化に関する研究

発表代表論文

- 1) Tanaka H, Ueda K, Karita M, Ono T, Manabe Y, Kajima M, Fujimoto K, Yuasa Y, Shiinoki T. Immune checkpoint inhibitors after radiation therapy improve over all survival rates in patients with stage IV lung cancer. *Cancers*. 2023; 15: 4260.
- 2) Kawazoe Y, Shiinoki T, Fujimoto K, Yuasa Y, Tanaka H, et al. Comparison of the radiomics-based predictive models using machine learning and nomogram for epidermal growth factor receptor mutation status and subtypes in lung adenocarcinoma. *Phys Eng Sci Med*. 2023; 46: 395-403.
- 3) Fujimoto K, Shiinoki T, Yuasa Y, Kawazoe T, Tanaka H, et al. Assessing liver fibrosis distribution through liver elasticity estimates obtained using a biomechanical model of respiratory motion with magnetic resonance elastography. *Phys Med Biol*. 2022; 67: 155005.
- 4) Fujimoto K, Shiinoki T, Yuasa Y, Tanaka H. Estimation of liver elasticity using the finite element method and four-dimensional computed tomography images as a biomarker of liver fibrosis. *Med Phys*. 2021; 48: 1286-1298.
- 5) Tanaka H, Ono T, Manabe Y, Kajima M, Fujimoto K, Yuasa Y, Shiinoki T, et al. Anemia is a prognostic factor for overall survival rate in patients with non-small cell lung cancer treated with stereotactic body radiation therapy. *Cancer Manag Res*. 2021; 13: 7447-7453.
- 6) Shiinoki T, Yuasa, Fujimoto K, Tanaka H, et al. Analysis of dosimetric impact of intrafraction translation and rotation during respiratory-gated stereotactic body radiotherapy with real-time tumor monitoring of the lung using a novel six degrees-of-freedom robotic moving phantom. *Med Phys*. 2020; 47: 3870-3881.
- 6) Yuasa Y, Shiinoki T, et al. Estimation of effective imaging dose and excess absolute risk of secondary cancer incidence for four-dimensional cone-beam computed tomography acquisition.

- J Appl Clin Med Phys. 2019; 20: 57-68.
- 8) Shiinoki T, et al. Estimation of patient-specific imaging dose for real-time tumor monitoring in lung patients during respiratory-gated radiotherapy. *Phys Med Biol.* 2018; 63: 065016.
 - 9) Hanazawa H, Shiinoki T, et al. Clinical assessment of coiled fiducial markers as internal surrogates for hepatocellular carcinomas during gated stereotactic body radiotherapy with a real-time tumor tracking system. *Radiother Oncol.* 2017; 123: 43-48.
 - 10) Shiinoki T, et al. Verification of respiratory-gated radiotherapy with new real-time tumour-tracking radiotherapy system using cine EPID images and a log file. *Phys Med Biol.* 2017; 62: 1585-1599.