

Evaluation of correlation between response to radiotherapy and uptake of [¹⁸F]FRP-170 PET in head and neck squamous cell carcinoma

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Abstract

Head and neck squamous cell carcinoma (HNSCC) includes hypoxic cells which results in resistance to radiotherapy. [¹⁸F]FRP-170 PET has an ability to detect hypoxic region within the cancer. The purpose of this study is to evaluate a predictive value of [¹⁸F]FRP-170 PET in patients with HNSCC treated with radiotherapy. Three patients with HNSCC were examined with [¹⁸F]FRP-170 PET within two weeks before their radiotherapy. PET image was scanned 60 minutes after intravenous infusion of 370MBq [¹⁸F]FRP-170. The tumor/muscle ratios (SUV max of tumor/SUV max of muscle) of [¹⁸F]FRP-170 of all patients were calculated. Among the three patients, uptake of [¹⁸F]FRP-170 seems to be associated with the tumor radiotherapy response.