

Congress Abstract

Optimization of Positron Emission Tomography Computed Tomography Using ⁶⁸Ga-FAPI in the Diagnosis of Colorectal Cancer Metastases and Monitoring of Antitumor Treatment Efficacy

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Introduction: Colorectal cancer remains one of the leading causes of cancer morbidity and mortality. Timely detection of metastases and assessment of treatment efficacy are important tasks in modern oncology. PET/CT with ¹⁸F-FDG has limitations related to physiological uptake of the radiopharmaceutical in the intestine and variable sensitivity across different histological tumor types. The use of ⁶⁸Ga-FAPI, which has high affinity for tumor stroma and low background uptake, is a promising alternative.

Objective: To evaluate the diagnostic value of PET/CT with ⁶⁸Ga-FAPI in detecting colorectal cancer metastases and monitoring treatment efficacy.

Materials and Methods: The study included 311 patients with histologically verified colorectal cancer examined between January 2024 and January 2026. The study had a retrospective-prospective design. All patients underwent PET/CT using ⁶⁸Ga-FAPI. Radiopharmaceutical distribution, the presence of metastatic and additional suspicious lesions, as well as dynamic changes during treatment were assessed. Statistical analysis was performed in Microsoft Excel, calculating mean, median, and SUVmax range. The study was approved by the Local Bioethics Committee of the "Astana Medical University" NJSC (Decision No. 11 dated 27.02.2026).

Results: The mean age of patients was 58.5 years (range 17–87 years); 171 (55.0%) were women and 140 (45.0%) were men. Adenocarcinoma predominated (87%), predominantly G2; the majority of patients had stage II–III disease. Metastases were detected in 31.2% of patients, most frequently in the liver and lymph nodes; recurrence was observed in 13.0%. Additional suspicious lesions requiring verification were identified in 40% of patients. The mean SUVmax of metastatic lesions was 6.46 (range 1.1–13.8), for recurrence – 5.78 (range 2.6–9.5), and for suspicious lesions – 4.02.

Conclusions: PET/CT using ⁶⁸Ga-FAPI is a promising imaging modality for colorectal cancer, allowing detection of metastatic and additional suspicious lesions and assessment of dynamic changes during antitumor treatment.

Keywords: Colorectal Neoplasms; Neoplasm Metastasis; Positron-Emission Tomography; Fibroblast Activation Protein Alpha; Treatment Outcome; Neoplasm Recurrence; Local