

FDG-PET is a predictor of the metabolic response to chemotherapy in metastatic colorectal cancer patients (mCRC).

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Abstract Disclosures

Abstract:

**Background:** Limited information is available on the role of FDG-PET in the management of patients with mCRC. Bevacizumab prolongs overall survival and progression-free survival (PFS) when added to standard chemotherapy in mCRC patients. The purpose of the study was to explore the possible role of FDG-PET as response predictor for bevacizumab treatment in liver mCRC patients. **Methods:** Eighteen mCRC patients (7 women and 11 men), were treated with FOLFOX (n=12) or FOLFIRI (n=6) and bevacizumab (5 mg/kg). FDG-PET scans were performed before treatment (baseline) and median 15 days after cycle 5 (follow-up). PET scans were read by a nuclear medicine physician, blinded to the results of clinical parameters. The most representative liver lesion was used as target lesion. PET results were quantified by calculating the maximum standard uptake value (SUVmax) at baseline and follow-up. PFS was defined as the time from start of treatment to the date of first documented disease progression. **Results:** Median PFS was 10 months (95% CI: 8.51-11.49). The median baseline SUVmax was 5.18 (IQR: 3.61-8.42) and the median follow-up SUVmax was 2.93 (IQR: 2.15-5.94; p=0.025). Following the EORTC criteria, FDG-PET revealed a complete metabolic response in 8 patients (44%), partial metabolic response in 3 patients (17%), stable metabolic disease in 3 patients (17%) and progressive metabolic disease in 4 patients (22%). Correlation between metabolic response and radiological response according to RECIST was as follows: 6 of the 8 patients with radiological response had metabolic response (sensitivity 75%) and 5 out of 10 patients with radiological stable or progressive disease were metabolic non-responders (specificity 50%). Using the Cox proportional hazards model, the follow-up SUVmax (HR 1.33, 95% CI 1.000-1.776, p=0.05) showed a trend towards significant prediction of PFS. The Kaplan-Meier log rank test showed a PFS benefit for patients with >30% reduction in their SUVmax (p=0.02). **Conclusions:** The use of FDG-PET for therapy monitoring is clinically feasible and the follow-up SUVmax seems to be a promising predictor of PFS.