^{18}F-FDG PET/CT Impact on Staging of Pancreatic Cancer

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Abstract : Aim: The prognosis of patients with pancreatic cancer is poor. The median of survival after establishing diagnosis is 3-11 months without surgical treatment, 13-20 months with surgical treatment depending on the disease stage, 5-year survival is less than 5%. Radical surgical resection remains the only hope of curing the disease. Early diagnosis with valid establishment of tumor resectability is, therefore, the most important aim for patients with pancreatic cancer. The aim of the work is to evaluate the contribution and define the role of 18F-FDG PET/CT in preoperative staging. Material and Methods: In 195 patients (103 males, 92 females, median age 66,7 years, 32-88 years) with a suspect pancreatic lesion, as part of the standard preoperative staging, in addition to standard examination methods (ultrasonography, contrast spiral CT, endoscopic ultrasonography, endoscopic ultrasonographic biopsy), a hybrid 18F-FDG PET/CT was performed. All PET/CT findings were subsequently compared with standard staging (CT, EUS, EUS FNA), with peroperative findings and definitive histology in the operated patients as reference standards. Interpretation defined the extent of the tumor according to TNM classification. Limitations of resectability were local advancement (T4) and presence of distant metastases (M1). Results: PET/CT was performed in a total of 195 patients with a suspect pancreatic lesion. In 153 patients, pancreatic carcinoma was confirmed and of these patients, 72 were not indicated for radical surgical procedure due to local inoperability or generalization of the disease. The sensitivity of PET/CT in detecting the primary lesion was 92.2%, specificity was 90.5%. A false negative finding in 12 patients, a false positive finding was seen in 4 cases, positive predictive value (PPV) 97.2%, negative predictive value (NPV) 76,0%. In evaluating regional lymph nodes, sensitivity was 51.9%, specificity 58.3%, PPV 58,3%, NPV 51.9%. In detecting distant metastases, PET/CT reached a sensitivity of 82.8%, specificity was 97.8%, PPV 96.9%, NPV 87.0%. PET/CT found distant metastases in 12 patients, which were not detected by standard methods. In 15 patients (15.6%) with potentially radically resectable findings, the procedure was contraindicated based on PET/CT findings and the treatment strategy was changed. Conclusion: PET/CT is a highly sensitive and specific method useful in preoperative staging of pancreatic cancer. It improves the selection of patients for radical surgical procedures, who can benefit from it and decreases the number of incorrectly indicated operations.

Keywords : cancer, PET/CT, staging, surgery
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