18F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG-PET/CT) imaging in the staging and prognosis of inflammatory breast cancer

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ABSTRACT

Background
To prospectively assess fluorodeoxyglucose positron emission tomography/computed tomography (FDG-PET/CT) staging and prognosis value in patients with suspected inflammatory breast cancer (IBC). METHODS:: Sixty-two women (mean age 50.7 +/- 11.4 years) presenting with unilateral inflammatory breast tumors (59 invasive carcinomas; 3 mastitis) underwent a PET/CT scan before biopsy.

Results
PET/CT scan was positive for the primary malignant tumor in 100% and false positive in 2 of 3 benign mastitis. In 59 IBC patients, FDG nodal foci were detected in axillary (90%; n = 53) and extra-axillary areas (56%; n = 33) ipsilateral to the cancer. Compared with clinical examination, the axillary lymph node status by PET/CT was upstaged and downstaged in 35 and 5 patients, respectively. In 7 of 9 N0 patients, the axillary lymph node positivity on PET/CT was correct, as revealed by pathological postsurgery assessment (not available in the 2 remaining patients). The nodal foci were compared with preoperative fine needle aspiration and/or pathological postchemotherapy findings available in 44 patients and corresponded to 38 true positive, 4 false-negative, and 2 false-positive cases. In 18 of 59 IBC patients (31%), distant lesions were found. On the basis of a univariate analysis of the first enrolled patients (n = 42), among 28 patients who showed intense tumoral uptake (standard uptake value(max)>5), the 11 patients with distant lesions had a worse prognosis than the 17 patients without distant lesions (P = .04).

Conclusion
FDG-PET/CT imaging provides additional invaluable information regarding nodal status or distant metastases in IBC patients and should be considered in the initial staging. It seems also that some prognostic information can be derived from FDG uptake characteristics. Cancer 2009. (c) 2009 American Cancer Society.