

**Response to “Breast cancer staging: to which women <sup>18</sup>F-DG-PET/CT should be offered?” by Groheux et al.**

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Financial Support: Susan G. Komen for the Cure Research Grant KG110441 (GAU).

Financial Disclosures: None

We thank Drs Groheux and Hindie for their comments on our article (1). Their position and ours are quite similar. We both support the growing evidence for using  $^{18}\text{F}$ -FDG PET/CT for systemic staging of patients with newly diagnosed stage III and IIB breast cancer (1, 2), as the detection of unsuspected distant metastases in these patients would alter treatment from neoadjuvant therapy and surgery to palliative systemic therapy. While our study specifically examined the yield of  $^{18}\text{F}$ -FDG PET/CT for patients less than 40 years of age, Drs Groheux and Hindie's cited study was unselected for age. It is of course difficult to compare studies that vary in design and are from regions that may potentially encompass different patient populations, but we note that the yield of  $^{18}\text{F}$ -FDG PET/CT for detecting distant metastases for each initial stage was higher in the cohort of patients less than 40 years of age than in the cohort of patients unselected for age. For example, the rate of upstaging to distant metastatic disease (stage IV) in initially stage IIB patients was 17% for patients less than 40 years of age (1), and 10.7% for patients unselected for age (2). Thus, while  $^{18}\text{F}$ -FDG PET/CT may be considered for any patient with newly diagnosed stage IIB and III breast cancer, the value of the exam may be higher for younger patients.

We would caution that further evaluation is still warranted. There are still several patient and tumor factors which have not been adequately addressed. For example, tumor histology may influence the utility of  $^{18}\text{F}$ -FDG PET/CT for systemic staging of patients with breast cancer. Indeed, both primary (3) and metastatic (4) lesions from invasive lobular carcinoma (ILC) are less apparent on  $^{18}\text{F}$ -FDG PET than comparable lesions in patients with invasive ductal carcinoma (IDC). Thus, the utility of  $^{18}\text{F}$ -FDG PET/CT for systemic staging of patients with newly diagnosed ILC may not be as strong as for patients with IDC. Histologic subtype of breast

cancer could also effect the evaluation of prognosis in initial (5) and metastatic (6, 7) breast cancer, and evaluation of treatment response (8).

Thus, should all patients with newly diagnosed stage IIB or III breast cancer be offered <sup>18</sup>F-FDG PET/CT? While there is growing evidence in support, we must continue to investigate whether this applies to all patients with stage IIB and III breast cancer or not.

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