Effective Health Care

Imaging Techniques for Locoregional Staging of Breast Cancer Nomination Summary Document

Results of Topic Selection Process & Next Steps

The topic, *Imaging Techniques for Locoregional Staging of Breast Cancer*, is not feasible for a full systematic review due to the limited data available for a review at this time.

Topic Description

Nominator(s): Organization

Nomination Summary: For breast cancer patients many established imaging technologies can show the location of the cancer, the size of the tumor, and whether the cancer has spread, but no one technology has been consistently identified as the most accurate for locoregional staging.

Staff-Generated PICO
Population(s): Women with recently diagnosed with breast cancer undergoing imaging for locoregional staging
Intervention(s): Available imaging techniques for locoregional staging of breast cancer and axillary lymph node staging (e.g., ultrasonography, computed tomography [CT], magnetic resonance imaging [MRI], radio-guided sentinel node imaging, and positron emission tomography [PET]/ CT with fluoro-2-deoxy-D-glucose [FDG])
Comparator(s): A comparison of the available imaging techniques
Outcome(s): Long-term benefit of staging accuracy, including prevention of misdiagnoses, accurate assessment of metastases, appropriate surgeries including mastectomy and survival/mortality

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Key Questions from Nominator: What is the comparative effectiveness of imaging techniques for the locoregional staging of breast cancer?

Considerations

- The topic meets EHC Program appropriateness and importance criteria. (For more information, see http://effectivehealthcare.ahrq.gov/index.cfm/submit-a-suggestion-for-research/how-are-research-topics-chosen/.)
- The American Cancer Society estimates that more than 232,000 new cases of breast cancer in women were diagnosed in the US in 2013 and that the the long-term risk of local recurrence of breast cancer is 0.5% to 1% per year.

- Many different imaging technologies can show the location of the cancer, the size of the tumor, and whether the cancer has spread, but no single technology has been consistently identified as the most accurate for locoregional staging of breast cancer.
- There is limited research on the comparative effectiveness of imaging techniques for the locoregional staging of breast cancer in women recently diagnosed with breast cancer. A scan of the current literature from the past five years identified four recent primary research studies that have been published on this topic.
- Of the four studies that were identified, three focus on 18F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG-PET/CT):
    - Mittal et al. assessed the sensitivity of FDG-PET/CT in confirming known lymph nodal and distant metastases and in identifying new ones in locally advanced breast cancer (LABC).
    - Alberini et al. prospectively assessed FDG-PET/CT staging and prognosis value in 62 women with suspected inflammatory breast cancer (IBC)
    - Heusner et al. assessed FDG PET/CT and CT for the detection of axillary lymph node metastases in breast cancer patients and as a pre-test for the triage to sentinel lymph node biopsy (SLNB) versus axillary lymph node dissection (ALND).
- The fourth study, published in 2012 by Valente et al., focuses on multimodal imaging, including mammography, ultrasonography, and magnetic resonance imaging (MRI).
    - Valente et al. retrospectively assessed the accuracy of physical examination of the axilla, digital mammography, axillary ultrasonography, and contrast-enhanced breast MRI in predicting axillary nodal involvement in cancer.