Society of Interventional Oncology

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NCCN Guidelines Panel: Breast Cancer

On behalf of the Society of Interventional Oncology, we respectfully request the NCCN Breast Cancer Guideline panel to review the enclosed data for inclusion of locoregional therapies and metabolic imaging for metastatic breast cancer.

We suggest recommending PET/CT to monitor disease progression rather than specifying it as optional and including embolotherapies for treatment of refractory hepatic metastasis.

Clinical scenario 1: Detection and monitoring metastatic disease.

The current NCCN guidelines specify that FDG PET/CT is not routinely indicated, but optional, and is "most useful in situations where standard imaging results are equivocal or suspicious." However, studies have demonstrated that FDG PET/CT can detect unsuspected metastasis, is superior to conventional CT imaging in detecting relapse, better reflects response to treatments, and better predicts survival outcomes. We recommend that FDG PET/CT be included in the routine detection of metastatic disease and monitoring at regular intervals, rather than as an optional/trouble-shooting imaging strategy.

The following articles are relevant to this proposed change:

- Ulaner, Gary A., et al. "18 F-FDG-PET/CT for systemic staging of newly diagnosed triple-negative breast cancer." European journal of nuclear medicine and molecular imaging 43.11 (2016): 1937-1944.
- Riedl, Christopher C., et al. "Comparison of FDG-PET/CT and contrast-enhanced CT for monitoring therapy response in patients with metastatic breast cancer." European journal of nuclear medicine and molecular imaging 44.9 (2017): 1428-1437.
- Guo, Wei, et al. "Early re-staging and molecular subtype shift surveillance of locally recurrent or metastatic breast cancer: a new PET/CT integrated precise algorithm." Cancer letters 418 (2018): 221-229.
- Hildebrandt, Malene Grubbe, et al. "[18F] Fluorodeoxyglucose (FDG)-positron emission tomography (PET)/computed tomography (CT) in suspected recurrent breast cancer: a prospective comparative study of dual-time-point FDG-PET/CT, contrast-enhanced CT, and bone scintigraphy." Journal of Clinical Oncology 34.16 (2016): 1889-1897.

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Clinical scenario 2: <u>Treatment of liver-dominant hepatic metastasis refractory to systemic therapy.</u>

Liver metastasis is associated with poorer oncologic outcomes. Liver tumors may cause abdominal pain or result in compression of the portal vein or obstruction of bile ducts. In selected patients who are not eligible for resection or ablation, transarterial therapies such as chemoembolization and radioembolization have demonstrated radiologic responses that translate to prolonged patient survival. Combining liver-directed treatments in the management of metastatic breast cancer with liver-only or liver-dominant disease can provide longer disease control while delaying the need to change to another line of systemic therapy. Also, in patients with hormonally responsive breast cancer and new-onset liver metastases, transarterial locoregional therapy can delay the initiation of systemic chemotherapy and benefit the patient's quality of life. Studies suggest that radioembolization is superior to chemoembolization in regard to imaging response and adverse event rates. We propose including locoregional embolotherapy with radioembolization as a treatment for refractory hepatic metastasis.

The following articles are relevant to this proposed change:

- Deipolyi, Amy R., et al. "Association of PI3K Pathway Mutations with Early Positron-Emission Tomography/CT Imaging Response after Radioembolization for Breast Cancer Liver Metastases: Results of a Single-Center Retrospective Pilot Study." Journal of Vascular and Interventional Radiology 29.9 (2018): 1226-1235.
- Haug, Alexander R., et al. "18F-FDG PET/CT predicts survival after radioembolization of hepatic metastases from breast cancer." Journal of Nuclear Medicine 53.3 (2012): 371-377.
- Chang, Jodie, et al. "Liver-dominant breast cancer metastasis: a comparative outcomes study of chemoembolization versus radioembolization." Anticancer research 38.5 (2018): 3063-3068.

We would like to thank the NCCN panel members for their time and effort in reviewing this submission.

Sincerely,

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